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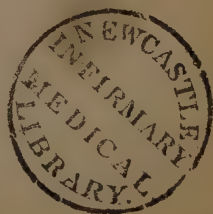
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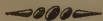
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PREFACE

(TO THE FIRST EDITION).



The subject of this Essay has occupied the pens of so many able writers, of late, that some excuse may seem necessary for another tax on the Public. The present, however, is not a very heavy tax on the purse or patience of the reader; for if it be a bad, it is, at all events, not a large book. I shall not therefore offer an apology, since no apology will procure a favourable reception for him who obtrudes himself unnecessarily on the time and attention of his professional brethren.

In this Essay I have endeavoured to investigate the operation of moral causes on the digestive organs, more minutely than has generally been done; and to trace, with more care, the reaction of these organs on the mental faculties. The amount of suffering which is inflicted on the body through the agency of the mind, is only equalled by the retributive misery reflected on the mind through the medium of the body. The play of affinities and reciprocity of sympathies between the intellectual and material portions of our nature, have not been sufficiently attended to in the investigation and management of diseases; and I am not without hope that this Essay may be instrumental in lessening the extent of human maladies by increasing our knowledge of their moral as well as physical causes.

In the treatment, I have ventured to expose the injury which is done to the stomach by a farrago of tonics and stimulants, as well as by violent purgation—while I have shewn the efficacy of some simple remedies when judiciously employed. But, above all, I have endeavoured to demonstrate the true principles on which the plan of diet and regimen should be constructed, not only in indigestion, but in a host of mental and corporeal discomforts which are little suspected of having their origin in the stomach. The result of my experience is here given, in as small a space as possible, and the Public will decide whether or not my observations have been correct and the deductions from them legitimate.

1st November, 1826.

PREFACE TO THE FOURTH EDITION.

The demand for a Fourth Edition of a purely medical work, in the short space of nine months, is rather unusual.

I have taken this opportunity of revising carefully the whole of the Work, and I have introduced, in various places, a considerable addition of what I hope will be found useful matter.

20th August, 1827.

PREFACE TO THE FIFTH EDITION.

Although I have had no reason to subvert any principle which had been laid down in the First Edition, I have, however, been able to make considerable improvements in subsequent Editions—and even in this last.

10th April, 1828.

PREFACE TO THE SIXTH EDITION.

In revising this Edition for the press, I have had but very few alterations to make. Additional experience has suggested a few additional hints in the course of the Essay.

10th August, 1829.

PREFACE TO THE SEVENTH EDITION.

By further experience and observation, I trust that this Edition is considerably improved.

1st July, 1831.

PREFACE TO THE EIGHTH EDITION.

Some trifling additions and corrections were all that were deemed necessary to this Eighth Edition.

16th August, 1833.

PREFACE TO THE NINTH EDITION.

In this Edition little has been altered, and still less struck out. A good deal, however, has been added—especially in the Sections on “ Digestion ” and “ Travelling Exercise.”

For the unexampled, and, he fears, unmerited success of this small Essay, the Author is under deep obligations to the Public.

October, 1836.

PREFACE TO THE TENTH EDITION.

The alterations in this Edition are so trifling that they need no allusion here.

Suffolk Place,
January, 1840.

JAMES JOHNSON.

CONTENTS.



PART I.

ON MORBID SENSIBILITY OF THE STOMACH AND BOWELS.

PRELIMINARY OBSERVATIONS.

	Page.
SECT. I. Prevalence of the Disease among all Classes of Society	1
Various Designations by which it is known.....	2
Indigestion, Dyspepsia, Hypochondriasis, Bilious Disorder.....	<i>ib.</i>
Distinction between the Ganglionic and Cerebro-Spinal Nerves....	3
Different Kinds of Sensibility in different Nerves.....	4
Organic and common Sensibilities of the Stomach	<i>ib.</i>
Danger of exciting common Feeling or Sensibility in the Stomach..	5
Food and Drink <i>ought</i> to produce no Sensation in the Stomach....	6
Irritation of the Stomach produces unpleasant Sensations in distant Parts of the Body, with or <i>without</i> Pain in the Stomach itself ..	7
Two Classes of Sympathetic Effects from Irritation in the Stomach	8
SECT. II. Digestion	9
Conversion of the Food into Chyme.....	<i>ib.</i>
Phenomena attendant on this Stage of Digestion	10
Evacuation of the Stomach and Change of the Chyme into Chyle ..	11
SECT. III. Digestibility of various Kinds of Food	12
Table shewing the mean Time of Digestion of the Different Articles of Diet	14

MORBID SENSIBILITY OF THE STOMACH AND BOWELS, ATTENDED WITH OBVIOUS DISORDER IN THE DIGESTIVE ORGANS.

SECT. IV. Phenomena of Repletion.....	22
Symptoms of a Fit of Intemperance	23
The manner in which Morbid Sensibility is formed, and the Founda- tion of Indigestion laid.....	<i>ib.</i>
SECT. V. Phenomena of Dyspepsia and Indigestion	24
Distressing <i>Fulness</i> of the Stomach, and Heartburn.....	25
<i>Rationale</i> of the above Phenomena	<i>ib.</i>
Remarks on Dr. Philip's Stages of Indigestion	27
"INDIGESTION" a conventional Term	28
Symptoms of Liver and Stomach Affection combined....	<i>ib.</i>
Distressing Effects of Vitiated Bile on the Digestive Organs	30

	Page.
SECT. V. Effects of Biliary Irritation on the Tongue, Eyes, Kidneys, &c....	33
Distressing Sense of Debility, varying with the State of the Stomach	34
<i>Tenderness</i> at the Pit of the Stomach, a deceptive symptom.....	<i>ib.</i>
Strictures on Dr. Philip's Remarks on this subject, and on the Organic Diseases to which Indigestion is said to lead	35
Changes produced in the Mucous Membrane of the Stomach, by a long Continuance of Irritation there	41
SECT. VI. Sympathetic Affections of various Organs.....	42
————— of the Brain	<i>ib.</i>
————— of the Nerves of Sense, as of Sight and Hearing	44
————— of the Heart	45
————— of the Lungs	46
————— of various other Parts of the Body	<i>ib.</i>
Sympathy between the Nerves of the Stomach and Nervous System	47

MORBID SENSIBILITY OF THE STOMACH AND BOWELS, WITHOUT ANY
OBVIOUS OR WELL-MARKED SYMPTOM OF DISORDER IN
THOSE ORGANS THEMSELVES

SECT. VII. PHYSICAL CAUSES of this Morbid Sensibility	50
————— bad Air—want of Exercise—late Hours.....	52
————— Diet, the chief Physical Cause.....	<i>ib.</i>
————— Criteria of the injurious Effects of Diet	53
Drink, a powerful Physical Cause	<i>ib.</i>
SECT. VIII. MORAL CAUSES of Morbid Sensibility, as Anxiety of Mind, &c.	55
————— Effects of Moral Causes exasperated by Food....	46
SECT. IX. NERVOUS IRRITABILITY—MENTAL DESPONDENCY	<i>ib.</i>
————— Intimate Connexion between Mind and Matter.....	<i>ib.</i>
————— Effects of Irritation of the Stomach on the TEMPER.....	57
SECT. X. HYPOCHONDRIASIS,—Remarks on the Doctrines which have been broached respecting this distressing Malady .	59
————— Graphic Sketch of this Disease.....	61
————— Symptoms of its early Approach	64
————— Remarkable Case of Hypochondriasis	65

TREATMENT OF MORBID SENSIBILITY OF THE STOMACH AND BOWELS,
DIETETIC, MEDICINAL, AND MORAL.

DIETETIC TREATMENT.

SECT. XI. Chief Indication, the Removal of the Sources of Irritation.....	69
Regulation of Diet, the first Object	<i>ib.</i>

	Page.
SECT. XI. Rules for establishing a Regimen	69
Criteria respecting the Quantity and Quality of Food, that may be taken without Injury	70
Observations on Drink	74

MEDICINAL TREATMENT.

SECT. XII. State of the Secretions to be first ascertained	77
Danger of irritating Purgatives in Dyspeptic Complaints	78
Cases where Mercury may be necessary or not	<i>ib.</i>
Observations on the White Mustard Seed	81
VEGETABLE Bitters and Tonics	83
————— Danger of their too early Adminis- tration.....	<i>ib.</i>
NITRATE OF SILVER, an important Sedative in Morbid Sensibility	84
————— Cases in illustration of its Utility.....	<i>ib.</i>
SULPHATE OF QUININE, the best and almost the only Bitter Tonic..	86
Treatment of Sympathetic Affections of various Parts of the Body..	88

MORAL REMEDIES.

SECT. XIII. General Inefficiency of Moral Means in Morbid Sensibility, when not conjoined with Physical	90
--	----

TRAVELLING EXERCISE; OR CHANGE OF AIR AND SCENE.

SECT. XIV. Rules for the Management of Exercise.....	91
Value of the lighter Gymnastic Exercises.....	92

MORAL AND PHYSICAL EFFECTS OF TRAVELLING.

[FIRST TOUR, IN 1823.]

Plan of a three Months' Tour for the Restoration of Health.....	93
Amount of active Exercise taken by the Author on a Tour	95
Routine of Exercise, Diet, and Rest	<i>ib.</i>

[SECOND TOUR THROUGH FRANCE, SWITZERLAND, AND ITALY, IN 1829.] 96

Atmospherical Transitions in Italy.....	97
Mountain of Radicofani	98
Sirocco and Tramontane at Naples	99
The Passage of the Pontine Fens by Night	<i>ib.</i>
Crossing of the Alps in Winter	100
Snow-storm on the Mountain of Finale	<i>ib.</i>
South of France in Winter.....	103

[THIRD TOUR, IN 1832.]

Home Circuit	103
--------------------	-----

	Page.
[FOURTH TOUR, THROUGH HOLLAND, GERMANY, SWITZERLAND AND ITALY, IN 1834.]	
Medicinal Waters	105
Warm Bathing.....	106
MORAL EFFECTS of Travelling Exercise	109
PHYSICAL EFFECTS of Travelling Exercise	112
Illustrations among the Alps	113
Phthysical Invalids	114
Dyspeptic Invalids	115
Dropsical Complaints	<i>ib.</i>
Affections of the Heart	116
Effects of constant CHANGE OF AIR.....	117
SECT. XV. Mr. Abernethy's System.	<i>ib.</i>



PART II.

DISEASES AND REGIMEN OF INVALIDS FROM HOT CLIMATES.

The Youth setting out and the Invalid returning Home, contrasted	123
Dangers on returning to a Cold from a Hot Climate	124
The Lungs liable to take on Disease	125
Conduct on the Voyage Home from the Indies.....	126
Necessity of strict abstemiousness on Embarking for Europe	<i>ib.</i>
The Danger of Hypochondriasis after returning	127
Debility on the Voyage Home	<i>ib.</i>
Great Danger from too much Food	128
Rules for Food and Medicine.....	129
Bowel-Complaints on the Passage Home	132
———— Dietetic and Medicinal Treatment of	136
Sympathetic Affection of the Chest on the Voyage Home.....	139
Observations on Dyspeptic Consumption, as it is commonly called	<i>ib.</i>
Stages—Diagnosis by Auscultation—Treatment	142
Organic Disease of the Liver.....	144
Deceptive methods of ascertaining Organic Disease of this Viscus.....	145
Diagnosis of Disease in the Liver.....	146
Different Kinds of Disease in the Liver.....	147
Wasting of the Flesh, a characteristic Symptom	148
Treatment of Organic Disease of the Liver	149
Criticisms of the Reviewers	153

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ON
INDIGESTION;
OR
MORBID SENSIBILITY
OF THE
STOMACH AND BOWELS,
&c. &c. &c.

PART I.

SECT. I.—PRELIMINARY OBSERVATIONS.

THE class of complaints forming the subject of investigation in this Essay is of most extensive bearing, and of paramount importance—not only to the valetudinarian—but to almost every individual in civilized life; a class which so much disturbs our moral as well as our physical nature, that it is hard to say which is the greater sufferer, the mind or the body! This malady, or rather abstract of all maladies, is in itself such a Proteus—arises from so many different causes—assumes so many different shapes—produces so many strange and contrary effects—that it is almost as difficult to give it a name as to describe its ever-varying features. It knocks at the door of every gradation of society, from the monarch, in his splendid palace, down to the squalid inhabitant of St. Giles or Saffron Hill, whose exterior exhales the effluvium of filth, whose interior that of inebriating potations. No moral attributes, no extent of power, no amount of wealth, are proofs against this wide-spreading evil. The philosopher, the divine, the general, the judge, the merchant, the miser, and the spendthrift, are all, and in no very unequal degree, a prey to the Protean enemy. If this statement be correct—if, under such a variety of circumstances, and excited by such a variety of causes, the same malady or class of

maladies, should be found to assail such different characters, and give rise to such an endless variety of phenomena, there must surely be some connecting link, some prevailing error, some pervading disposition, common to all, which can thus place the philosopher and the peasant, the affluent and the indigent, the virtuous and the vicious, on one common level in regard to a particular affliction of body and mind.

The designations which have been applied to this genus or class of diseases are numerous, and none of them expressive of the real *nature* of the malady, but only of some of its multiform symptoms. Of all these designations, INDIGESTION has been the most hacknied title, and it is, in my opinion, not the least erroneous. The very worst forms of the disease—forms, in which the body is tortured for years, and the mind ultimately wrecked, often exhibit no sign or proof of indigestion in the common sense of the word—the appetite being good—the digestion complete—and the alvine excretions apparently natural. Nearly the same objection lies against the term DYSPEPSIA, or difficult digestion. The train of symptoms exhibited in indigestion or dyspepsia, is only one feature (a very common one, I grant), of the Proteiform malady under consideration; and by no means the most distressing one. The term HYPOCHONDRIACISM conveys no just idea of the *nature* of the disease, though a group of some of its more prominent phenomena is usually understood by that term. Cullen was very wrong in defining hypochondriasis to be “indigestion with languor, sadness, and fear, from inadequate causes, in a melancholic temperament.” Many of the most exquisite specimens of hypochondriacism are unattended with indigestion. Neither is Falret correct in making the *brain* the constant primary seat of hypochondriacism. The mind is affected no doubt—but only in a secondary manner. “Bilious disorder” is a term equally vague and equally erroneous as the others. Derangement of the biliary secretion is a frequent concomitant, perhaps a frequent cause or consequence of the malady; but it is by no means always present, and when present, it is only one feature of the disease, and does not constitute its nature or essence. Of the various other designations, as spleen, vapours, melancholy, nervousness, irritability, mental despondency, &c. I need only say that they are forms or features of a disorder which assumes almost all forms. It would, therefore, be of some advantage to society at large as well as to the profession, could we ascertain the leading causes by which this disorder is produced, the link by which its ever-varying features are connected, and the means by which so complicated an affliction may be averted, mitigated, or removed. In order to clear the way for this investigation, the importance of which

will be presently seen, it is necessary to make a few physiological observations.

In the nervous system we distinguish two great classes of nerves—those which take their origin from the brain and spinal-marrow—and those which are called the ganglionic nerves. The *former* transmit sensations to the sensorium, or organ of the mind, and nervous influence to the voluntary muscles—the *latter* regulate the functions of various vital and other organs, as those of the stomach, liver, heart, &c. It is in the first class of nerves that we find the common sensibility of touch, and also the other senses, as sight, hearing, smelling, and tasting. These nerves of sense teach us, at once, that special or particular kinds of sensibility only are possessed by particular nerves. The optic nerve is only sensible to *light*, and will not convey the sense of touch, hearing, tasting, or smelling. The eye, in a state of health, may be touched by the finger, and hardly a sensation will be excited; but let the same organ be inflamed, or irritated, and then the most painful sensation will be produced by the slightest touch. In the same way, the cartilaginous surfaces and the lining membranes of the joints are endued with a peculiar, or special, and not a common sensibility. They feel not the friction produced by even violent motion; but let inflammation or irritation take place in these parts, and then the peculiar, unconscious, or what may be termed *organic* sensibility will be raised or changed into common or even morbid sensibility, and the slightest motion will be attended with exquisite pain. Again, the auditory nerve receives no impression from light, or any thing but sound. The nerves distributed over the body for touch, will not convey any other impression than that which is peculiar to their office.—Whenever the proper stimulus is applied to any of these nerves, we are conscious of the impression, at least while we are awake.

Now the ganglionic nerves have their peculiar offices and stimuli, as well as the cerebro-spinal nerves—but with this great difference, that we are quite unconscious of the impressions made on them, so long as these impressions are within the range of salutary action. The stomach is as sensible to the stimulus of food as the eye is to light, but we feel nothing of the impression. Let any one attentively observe when he eats plain food, or swallows plain drink. He feels both of these in his mouth and palate; but the moment that either of them passes down into the stomach, he is quite unconscious of its presence in that organ. It is so with all the other internal organs. The lungs feel the air, but we are not conscious of its presence in the air-cells—the heart feels the stimulus of blood, without our knowledge—the gall-bladder is sensible to the presence of bile—the intestines to chyme and to fæces—the

urinary bladder to urine, and so on—while the intellectual system is quite unconscious of all these sensations.

But let us go a step farther. Swallow a tea-spoonful of tincture of capsicum, or a table-spoonful of brandy; and then you feel not only a burning sensation in the mouth and throat, but a certain *degree* of the same sensation in the stomach.* Simple as this experiment may appear, and unimportant any conclusion thence resulting, it nevertheless unfolds one of the most fundamental views in pathology, and one of the most useful precepts in the art of preserving health. The moment we call forth *conscious sensation* or excitement in the stomach, whether it be of a pleasurable or a painful kind, we offer a violence to that organ, however slight may be the degree. Whenever the *conscious sensibility* of the stomach (or, indeed, of any other internal organ), is excited by any thing we introduce into it—by any thing generated in it—or by any influence exercised on it, through the medium of any other organ, we rouse one of Nature's sentinels, who gives us warning that her salutary laws are violated, or on the point of being violated. Let us view the

* We hear it commonly laid down by lecturers and physiological writers that there is greater sensibility at the extremities of tubes and passages in the body, as the œsophagus, urethra, rectum, &c. than in the other portions of the same conduits. This is not a very correct view of the subject. There is more of common or *cutaneous* sensibility at these extremities of passages, but less of the *special organic* sensibility or excitability peculiar to each structure. When warm water is thrown up by a syringe into the rectum or colon, the heat is only felt in the anus, unless the temperature be so high as to greatly offend the organic sensibility of the mucous membrane, when a sense of pain rather than of heat is felt in the bowels. It is the same with cold water injected into the intestines. It produces the sensation of cold in the rectum, but no sensation at all in the intestines unless it be of very low temperature, when it occasions a dull *colicky pain* in the bowels.

It is highly probable that different portions of the alimentary canal are endued with different *kinds* of sensibility or rather excitability. The sensibility of the stomach is in accordance with the presence of *undigested* food, when first swallowed, which would and does occasion much inconvenience in the duodenum and other intestines; while we know that the presence of bile in the duodenum produces no unpleasant effect there; whereas, if it regurgitate into the stomach, it disorders the whole system. The organic sensibility of the large intestines is very different in kind from that of the small. The presence of fecal matters in the colon and rectum produces no sensation; but if substances pass down undigested from the stomach, the whole line of the intestines is irritated and disturbed—although the effects are often not felt *there*, but in various other parts of the body from sympathy. Onions, chestnuts, and a hundred other things, eaten in the evening, will disturb the organic or special sensibility of the stomach and bowels, producing what is called the fidgets, restlessness, incubus, and sundry other disagreeable effects, in parts of the body far remote from the actual seat of irritation.

matter closer. We take an abstemious meal of plain food, without any stimulating drink. Is there any *conscious sensation* produced thereby in the stomach? I say no. We feel a slight degree of pleasant excitement throughout the whole frame, especially if we have fasted for some time previously, but no distinct sensation in the stomach. There is not—there ought not to be, any *conscious excitement* or sensation induced in this organ by the presence of food or drink, in a state of health—so true is the observation, that to feel that we have a stomach at all is no good sign.

The physiological action of food and drink on the stomach is shown more on other organs and parts than in the stomach itself. When the quantity is moderate and the quality simple, there is nothing more experienced than a general sense of refreshment, and the restitution of vigour, if some degree of exhaustion have been previously induced. We are then fit for either mental or corporeal exertion.* But let a full meal be made, and let a certain quantity of wine or other stimulating liquor be taken;—we still feel no distinct sensation in the stomach; but we experience a degree of general excitement or exhilaration. The circulation is quickened—the face shows an increase of colour—the countenance becomes more animated—the ideas more fluent. This excitement from food and drink, however, is not only transient, but it is moreover partial. In proportion as we have excited the ganglionic system of nerves, or, in other words, the involuntary or vital organs (stomach, heart, &c.), we disqualify the voluntary muscles for action, and the intellectual system for deep thought and other mental operations. In fact, we are then only fit to sit and talk very comfortably over our wine—and ultimately go to sleep. Whether this habit, which is that of civilized life in general, be that which is best adapted for preserving or regaining health, is a question which I shall presently discuss; but, in the mean time, it will be sufficiently evident that pleasurable sensations are diffused over mind and body, by the presence of food and wine in the stomach, *without the existence of any distinct sensation or sensible excitement in the stomach itself*. This is an obvious truth, and it is of great importance to remember it; for if the nerves of the stomach, *in a state of health*, be capable of exciting pleasurable emotions in the mind, and comfortable sensations in the body, on the application of good food and generous wine, we shall find that

* I should, perhaps, except the *dinner* meal, which is always followed by some degree of mental and corporeal inaptitude for exercise, however temperate the repast, especially in civilized, or artificial modes of life.—10th Edition.

the same nerves, *when in a disordered state*, are equally capable of exciting the most gloomy thoughts in the mind, and the most painful sensations in the body, on the application of the very same species of refection, either with or *without* an unpleasant sensation in the stomach itself.

When the stomach is in a *healthy* condition, the application of certain agents will irritate its nerves, and produce a train of phenomena bearing considerable analogy to those resulting from the application of common food in a disordered state of the gastric nerves. Thus, let some tartar-emetic be secretly introduced with the wine which a man drinks after dinner. Instead of the pleasant sensations usually produced by this beverage, he soon begins to perceive a languor of mind and body—the face grows pale instead of red—the mind is unsteady and depressed—the muscular power is diminished—the head aches or becomes confused—the heart beats slowly or intermits—in short, there is a prostration of all the corporeal and intellectual powers—and all this, in many cases, before any disagreeable sensation is felt in the stomach. At length, nausea and vomiting take place, if the dose be sufficient—the contents of the stomach are ejected—reaction succeeds—and the mental and corporeal energy is once more restored. If tincture, or any other preparation of digitalis be introduced into the stomach, a train of the most distressing symptoms is induced throughout the whole system. The head becomes giddy—the sight imperfect—strange noises are heard in the ears—dreadful depression of spirits is experienced, with a feeling or fear of dying—irregular action of the heart—sense of sinking at the pit of the stomach, &c. &c. These phenomena will often go to a great height, without any distinct or disagreeable sensation in the stomach itself. Sometimes, however, and especially if the deleterious agent be introduced abruptly and in large quantity, nausea and sickness of stomach are among the first phenomena (though never the *very first*), and the other symptoms above enumerated follow. A thousand examples might be adduced where certain articles both of food and physic act in this manner on the nerves of the stomach, in the midst of health, and from thence diffuse their baleful influence over mind and body. These examples are familiar to the medical practitioner, and there is scarcely an individual who has not experienced, in his own person, a sample, more or less impressive, of the above kind.*

These facts authorise us to conclude, *first*, that, from the stomach, a

* Green tea has been known to occasion such formidable symptoms as to threaten death.—10th Ed.

diffusive energy and pleasurable feeling may be extended to all other parts of the body, and also to the mind, or at least to the organ of the mind—*without any distinct pleasurable sensation in the stomach itself*:—*Secondly*, that, from the stomach, may be diffused over the whole system, intellectual and corporeal, a train of morbid feelings and phenomena of the most distressing kind, with or *without* any distinct sensation of pain or uneasiness in the organs of digestion.

This view of the subject will be found of great importance in the investigation of diseases. It leads us to divide into two great classes, those symptomatic or sympathetic affections of various organs in the body, dependent on a morbid condition of the stomach and bowels—*viz.* into that which is accompanied by *conscious sensation*, irritation, pain, or obviously disordered function of the organs of digestion—and, into that which is *not* accompanied by any *sensible* disorder of the said organs or their functions. Contrary to the general opinion, I venture to maintain, from very long and attentive observation of phenomena, in others as well as in my own person, that this *latter* class of human afflictions is infinitely more prevalent, more distressing, and more obstinate, than the *former*. It is a class of disorders, the source, seat, and nature of which are, in nine cases out of ten, overlooked—and for very obvious reasons,—because the morbid phenomena present themselves any where and every where, except in the spot where they have their origin. But it may be asked, what are the proofs that various disorders, mental and corporeal, have their origin in gastric or intestinal irritation, that irritation not being sensible to the individual? I answer, that the proofs will be found in the observation of cases every hour presenting themselves in practice. I ask for no assent to propositions or assertions, unless they accord with the experience of the practitioner himself. There are great numbers of dyspeptics in the profession as well as out of it. Let these observe, in their own persons, the phenomena which I shall point out as proofs of the positions I have laid down, and decide according to the evidence of their own senses.

I have already shewn, in the examples of antimony and digitalis (and the list might be increased *ad infinitum*), that the remotest parts of the system may be thus disordered through the medium of the stomach, before any *sensible* effect is produced on the stomach itself. This, however, is in a state of health. But let the nerves of the stomach and bowels acquire a morbid sensibility or irritability from any of the various causes which I shall hereafter detail, and then it will require no such application as that of antimony or digitalis to induce a host of affections in remote parts of the body. Such food and drink as, in health, would

only nourish or agreeably stimulate, will then act like a poison on the system, deranging the mental, and disordering the corporeal functions, often without the slightest *sensible* inconvenience in the stomach and bowels themselves.* How is this ascertained? By simple observation. Let a person, labouring under any of those multiform symptoms included in the terms dyspepsia, hypochondriasis, &c., and more especially under mental despondency, brought on, for example, by moral afflictions, *but who feels no inconvenience in the stomach itself*, take food and wine in rather too great a *quantity*, or of a certain *quality*, and the symptoms will be aggravated, not perhaps immediately upon ingestion, but after a short lapse of time, often without any of the phenomena of indigestion. Let the same person reduce the *quantity* of even mild food, or abstain a whole day from any strong food; and let him take no wine or vegetable substance of difficult digestion; and he will find the symptoms mitigated. Let him return again to pretty full meals of mixed animal and vegetable diet, with his usual allowance of wine;—again will the corporeal, and especially the mental disorder be exasperated. Let him adhere strictly to a very moderate proportion of the simplest and most unirritating species of food and drink, and take such medicine as may be calculated to restore the natural, or soothe the morbid sensibility of the stomach and bowels; and then, if he does not experience, in a reasonable period of time, the most marked and surprising change for the better, I will acknowledge that all my observations are mere creatures of the imagination. I have seen so many instances proving incontestibly the truth of these positions, that I am convinced the great majority of those complaints which are considered purely mental, such as irritability and irascibility of temper, gloomy melancholy, timidity and irresolution, despondency, &c. might be greatly remedied, if not entirely removed, by a proper system of temperance, and with very little medicine. On this account, medical men often have it in their power to confer an immense boon of happiness on many valuable members of society, whose lives are rendered wretched by morbid sensitiveness of the mind, having its unsuspected source in morbid sensibility of the stomach, bowels, or nervous system.

* I may quote the authority of Whytt for this observation. “When the feeling of the nerves,” says he, “in *any of the organs* of the body becomes *unnatural or depraved*, the most disagreeable sensations and alarming symptoms are sometimes raised by the application of such substances as, in a sound state, would produce no manner of disturbance; and hence we may understand the surprising effect of certain smells, aliments, and medicines, on many delicate people.”—*Whytt on Nervous Disorders*.—10th Ed.

From numerous facts, indeed, which have come within my own observation, I am convinced that many strange antipathies, disgusts, caprices of temper, and eccentricities, which are considered solely as obliquities of the *intellect*, have their source in *corporeal* disorder. I could relate some curious illustrations, were I not prevented by regard to the personal feelings of others.

Before entering on the subject of INDIGESTION, as it is commonly called, it may be proper to take a consise view of PERFECT DIGESTION—since it is only by comparison that we can distinguish disordered from healthy function of an organ.

SECT. II.—DIGESTION.

THIS process, taken in its most general and most proper sense, may be defined, “the CONVERSION OF DEAD INTO LIVING MATTER.” At all events, it is the conversion of dead animal and vegetable substances into an animalized fluid qualified to enter into the current of the circulation, and there become part and parcel of the living machine. No other fluid, not even milk from the living udder, can be poured into the bloodvessels, without risk of life, and, therefore, we are authorised to conclude, that the chyle is a vitalized fluid like the blood itself. If this be a correct representation, and I believe it is, all inquiry as to *how* the change is effected, will be just as successful as the inquiry *how* man was changed from lifeless clay into a living animal at his first creation. But the prying eye of the physiologist has penetrated into some of Nature’s secret operations, and there are several curious phenomena *attendant* on the process of digestion, which may be glanced at in this place.

The food is, or ought to be, well masticated by the teeth, and is then propelled into the stomach, incorporated with a quantity of saliva. In the stomach this mass is applied to the internal surface of the organ, and, layer after layer, is there converted into chyme by the gastric secretion, or some vital power of which we are ignorant, and moved forward to the pyloric orifice, through which it is gradually propelled into the duodenum or second stomach. The muscular power of the stomach is, of course, the agent in moving forward the layers of digested matter; and thus, in succession, the whole mass which descended from the mouth is converted into a bland, whitish, cream-like substance, and finally expelled through the pylorus. The length of

time necessary for this process, and the degree of perfection in the process itself, vary in different individuals, and at different times in the same individual, according to the vigour of the organ, the nature and quantity of the aliment, and the state of mind and body during the period of digestion. According to the experiments of Dr. Philip on rabbits, it would appear that the chyme passes through the pyloric orifice, as it is formed in layers along the coats, and especially the great curvature of the stomach; but the attendant phenomena, in man, would incline us to believe that there is an accumulation of the chyme in the pyloric extremity of the stomach, during the first period of the gastric digestion at least, when it begins to pass off into the duodenum, with a correspondent change in the attendant phenomena. The experiments of Majendie and others would tend to shew that the food remains an hour or more in the healthy stomach before the change into chyme *commences*—and this appears highly probable, if we may judge by the external phenomena. Be this as it may, it requires from two to four or five hours, for the *completion* of the digestion in the stomach: and sometimes much more than this when the powers of the organ are weak, or the materials difficult of solution.*

In perfect health, if the quantity of aliment be moderate, and of a proper kind, the process of digestion scarcely disturbs the other functions of body or mind, and the individual is fit for his ordinary occupations, as I have already remarked. But, whether it is that the stomach is rarely in a state of perfectly natural health, or that the quantity and quality of our food and drink are too great or too exciting, it generally happens that a train of obvious phenomena take place, of which the following are the principal: viz. after an exhilaration of spirits, a sense of fulness in the region of the stomach, with some degree of heat there—a chilliness in other parts of the body—sense of inaptitude for exertion, whether intellectual or corporeal—increase of quickness in the pulse—diminution of several of the secretions—concentration of the circulation towards the organs of digestion, and a diminution of fulness in the capillaries of the skin—increase of secretion in the liver, pancreas, and mucous membrane of the stomach and upper intestines—and lastly, a disposition to lie down and sleep.

* In the 12th Number of the Medico-Chirurgical Review, published on the 1st of April, 1827, the reader will find a very curious suit of experiments, on the digestibility of different substances in the living human stomach, made in consequence of a fistulous wound of that organ. Dr. Beaumont has extended his experiments since the 8th Edition of this work was published, as will be seen farther on.—10th Ed.

It may be contended that these are natural phenomena, and *ought* to take place. We see animals lie down and sleep after they have satisfied their appetites. This is true; but they are generally animals of voracious propensities, or domesticated animals that are pampered. These gorge themselves, and then lie down to sleep. Their example is not to be followed by man. Those who live temperately and labour hard, are nearly as capable of work after dinner as after breakfast, making allowance for the fatigue previously undergone.*

From the above description of facts, it must be obvious that slow and complete mastication of the food is of the utmost importance; for, as Dr. Philip has properly remarked, this slowness of eating is a preventive of repletion, by drawing the action of the gastric fluid from the stomach to the food, and thus diminishing the appetite or sense of hunger. It will also be evident that the admixture of a large quantity of drink with the food, must greatly impede digestion, not only by overdistending the stomach, but by diluting too much the gastric fluid.

EVACUATION OF THE STOMACH.

In one, two, or three hours, then, the stomach begins to evacuate the digested aliment through the pylorus into the duodenum; and, in four, five, or six hours, the organ is emptied. In perfect health, and where the food is of proper quality and quantity, the whole of this process produces little or no sensible feeling in the individual, and when the stomach and upper portion of intestine are completely evacuated, the appetite returns again. But it is to be observed that, in proportion as the chyme passes from the stomach to the duodenum, the whole of the general phenomena before enumerated, become, as it were, reversed. The sense of fulness diminishes—the chilliness changes into a glow of heat—the mental and corporeal aptitude for exertion returns—the pulse falls to its natural standard—the secretions are all, or almost all increased—and, in short, the individual is completely recruited, and fit for his usual avocations.

In the duodenum, the chyme mixes with the bile and pancreatic secretion—the fluid then becomes more animalized, and, as it passes along

* At the same time, I would not advise those who have weak digestion to use exercise, if they can avoid it, for an hour or two after dinner, even if the repast be very temperate. Any considerable degree of corporeal exertion in them would be sure to interrupt the process of digestion;—and, in such individuals, a short repose on the sofa, after the principal meal, is by no means insalutary. After this repose, which allows the process of first digestion to go on without interruption, the individual gets up refreshed, and fit for mental or corporeal exercise.

the intestines, the chyle, or milky nutriment is taken up by the lacteal vessel, and carried into the torrent of the circulation by means of the thoracic duct. The fæcal remains passing along the colon take a shape and figure in the rectum, and are generally evacuated the next morning.

The changes which the chyme undergoes in the duodenum and upper intestines, and the passage of the useless residue along the colon *ought not* to cause any sensation, any extrication of air that is inconvenient, or, in fact, any phenomenon by which the individual might be rendered conscious that the process of digestion was going forward at all.

Such is a rapid sketch of healthy digestion; and every deviation from the course here described is, more or less, a deviation from health, or, in other words, an indication of disorder, or, at least, of disturbance, in the important function of digestion.

SECT. III.---DIGESTIBILITY OF VARIOUS KINDS OF FOOD.

ON the digestibility of different alimentary substances, a very curious series of experiments was made by M. Gosse, of Geneva, and is recorded by Spalanzani. This gentleman, by swallowing air, was able, at any time, to disgorge the contents of his stomach, and thus examine the comparative digestibility of different articles of food.

M. Gosse informs us that, in about an hour and a half after taking food, the aliment is changed into a pultaceous mass, the gastric juice merely rendering it fluid, without altering its nature. When the digestion was properly carried on there was no appearance of acid or alkali, and it required about three hours for its completion. When the digestive power, on the other hand, was weak, vegetable food ran into the acetous fermentation, and animal food into the putrefactive. In these states of weak or impeded digestion, vegetable matters, wine, and even spirits, soon degenerated into a strong acid; while all oily substances became rancid, and animal matters putrid, producing sour and fetid eructations. The following results of Dr. Gosse's experiments on himself and animals, seem, with a few exceptions, to accord with general observation, and are, with those of Dr. Beaumont, all that may be necessary, in an essay of this kind, for the guidance of the dyspeptic.

I.—SUBSTANCES INSOLUBLE, OR VERY DIFFICULT OF SOLUTION IN THE STOMACH.

Animal Substances.—1. Tendinous parts. 2. Bones. 3. Oily or fatty parts. 4. Hard-boiled white of egg. 5. Skins of fishes.

Vegetable Substances.—1. Oily seeds. 2. Expressed oils of different nuts and kernels. 3. Dried grapes (raisins). 4. Rind of farinaceous substances. 5. Pods of beans and peas. 6. Skins of stone fruits. 7. Husks of fruit with grains or seeds. 8. Stones of fruit.

II.—SUBSTANCES PARTLY SOLUBLE AND PARTLY INSOLUBLE.

Animal Substances.—1. Pork dressed in various ways. 2. Black puddings. 3. Fritters of eggs, fried eggs and bacon.

Vegetable Substances.—1. Dressed salads of various kinds. 2. White cabbage less soluble than red. 3. Beet-root, onions, and leeks. 4. Roots of red and yellow carrots. 5. The pulp of fruit with seeds. 6. Warm new bread and sweet pastry. 7. Fresh and dried figs. Of all these substances there were parts which were not digested in the stomach, but which were digested, however, while passing along the intestines, though at the expense of irritation there.

III.—SUBSTANCES SOLUBLE AND EASY OF DIGESTION, REQUIRING AN HOUR OR AN HOUR AND A HALF FOR THEIR REDUCTION INTO A PULP IN THE STOMACH.

Animal Substances.—Veal, lamb, mutton, and *the flesh of young animals in general, are more easy of digestion than that of the old.* 2. Fresh eggs. 3. Cow's milk. 4. Perch boiled.*

Vegetable Substances.—1. Celery, tops of asparagus. 2. Bottoms of artichokes. 3. Boiled pulp of fruits. 4. Pulp or meal of farinaceous seeds. 5. Different sorts of wheaten bread, without butter, the second day after baking, the crust more so than the crumb. Brown bread, in proportion as it contains more bran, is less digestible. 6. Turnips, potatoes (mealy), parsnips, not too old.

IV.—SUBSTANCES WHICH APPEARED TO FACILITATE THE POWER OF THE GASTRIC JUICE.

Salt—spices—mustard—horse-raddish—capers—wine and spirits in

* Such was the result of Gosse's experiments upon himself. Generally speaking, however, the flesh of *full-grown animals* will be found of easier digestion than that of either the young or the old. Veal, too, should not have been put at the head of the list. The easy digestibility of milk is very questionable.—J. J.

small quantities—old cheese—sugar in small quantity—bitters. Gentle exercise. *✍ The exercise should be very gentle indeed. It should be passive rather than active.—J. J.*

V.—SUBSTANCES WHICH RETARDED THE POWER OF THE GASTRIC JUICE IN THE STOMACH, AND OCCASIONED SOME OF THE FOOD TO PASS UNDIGESTED INTO THE INTESTINES.

Water, particularly when taken hot, and in large quantity—acids—astringents—oily substances—strong and violent exercise. *✍ He might have added mental exertion.—J. J.*

The foregoing results of experiments, though not, perhaps, free from error, form a tolerably correct rule for the guidance of patient and practitioner. But such is the difference of digestive power possessed by different individuals, and such the peculiarities, or, we might say, the caprice of some stomachs, that it is quite impossible to form any scale of digestibility as to the various species of food which is not liable to numerous exceptions. Each individual soon finds out what agrees or disagrees in diet, especially when the stomach is weak, or in a disordered condition; whereas, in health, almost every thing will digest, when taken in moderation. As this is not a professed Essay on diet, but on disordered conditions of the organs of digestion, I shall say no more on the subject of diet generally, but refer to express treatises on alimentation.

I have already alluded to some curious experiments which were made on digestion, by Dr. Beaumont, of America. The opportunity which Dr. B. enjoyed was unique—being the case of a man into whose stomach he could introduce all kinds of substances through a fistulous wound, and where he could also have ocular demonstration of the processes that were carried on.

TABLE shewing the Mean Time of Digestion of the different Articles of Diet.

Articles of Diet.	Mode of Preparation.	Time required for Digestion.	
		H.	M.
Rice.. . . .	Boiled	1	
Sago.. . . .	Do.	1	45
Tapioca	Do.	2	
Barley	Do.	2	

Articles of Diet.	Mode of Preparation.	Time required for Digestion.	
		H.	M.
Milk	Boiled	2	
Ditto	Raw	2	15
Gelatine	Boiled	2	30
Pig's feet, soused	Do.	1	
Tripe, soused	Do.	1	
Brains	Do.	1	45
Venison steak	Broiled	1	35
Spinal marrow	Boiled	2	40
Turkey, domestic	Roasted	2	30
Do. do.	Boiled	2	25
Turkey, wild	Roasted	2	18
Goose	Do.	2	30
Pig, sucking	Do.	2	30
Liver, beef's, fresh	Broiled	2	
Lamb, fresh	Do.	2	30
Chicken, full grown	Fricassee	2	45
Eggs, fresh	Hard boiled	3	30
Do. do.	Soft do.	3	
Do. do.	Fried	3	30
Do. do.	Roasted	2	15
Do. do.	Raw	2	
Do. whipped	Do.	1	30
Custard	Baked	2	45
Codfish, cured, dry	Boiled	2	
Trout, Salmon, fresh	Do.	1	30
Do. do.	Fried	1	30
Bass, striped, fresh	Broiled	3	
Flounder do.	Fried	3	30
Catfish do.	Do.	3	30
Salmon, salted	Boiled	4	
Oysters, fresh	Raw	2	55
Do. do.	Roasted	3	15
Do. do.	Stewed	3	30
Beef, fresh, lean, rare	Roasted	3	
Do. do. dry	Do.	3	30
Do. steak	Broiled	3	
Do. with salt only	Boiled	2	45
Do. with mustard, &c.	Do.	3	30
Do. fresh, lean	Fried	4	
Do. old, hard, salted	Boiled	4	15
Pork-steak	Broiled	3	15
Pork, fat and lean	Roasted	5	15
Do. recently salted	Boiled	4	30
Do. do.	Fried	4	15
Do. do.	Broiled	3	15
Do. do.	Raw	3	
Do. do.	Stewed	3	
Mutton, fresh	Roasted	3	15
Do. do.	Broiled	3	
Do. do.	Boiled	3	
Veal, fresh	Broiled	4	
Do. do.	Fried	4	30
Fowls, domestic	Boiled	4	
Do. do.	Roasted	4	
Ducks, do.	Do.	4	
Do. wild	Do.	4	30

Articles of Diet.	Mode of Preparation.	Time required for Digestion.	
		H.	M.
Suet, beef, fresh	Boiled	5	3
Suet, mutton	Do.	4	30
Butter	Melted	3	30
Cheese, old, strong.. .. .	Raw	3	30
Soup, beef, vegetables, & bread	Boiled	4	
Do. marrow-bones	Do.	4	15
Do. beans	Do.	3	
Do. barley	Do.	1	30
Do. mutton	Do.	3	30
Green corn and beans	Do.	3	45
Chicken soup	Do.	3	
Oyster soup	Do.	3	30
Hash, meat and vegetables ..	Warmed	2	30
Sausage, fresh.. .. .	Broiled	3	20
Heart, animal	Fried	4	
Tendon	Boiled	5	30
Cartilage	Do.	4	15
Aponeurosis	Do.	3	
Beans, pod	Do.	2	30
Bread, wheaten, fresh	Baked	3	30
Do. corn	Do.	3	15
Cake do... .. .	Do.	3	
Do. sponge	Do.	2	30
Dumpling, apple	Boiled	3	
Apples, sour and hard	Raw	2	50
Do. do. mellow	Do.	2	
Do. sweet do.	Do.	1	30
Parsnips	Boiled	2	30
Carrot, orange.. .. .	Do.	3	15
Beet	Do.	3	45
Turnips, flat	Do.	3	30
Potatoes, Irish.. .. .	Do.	3	30
Do. do.	Roasted	2	30
Do. do.	Baked	2	30
Cabbage, head.. .. .	Raw	2	30
Do. with vinegar	Do.	2	
Do. do.	Boiled	4	30

The following judicious remarks on this Table I quote from a recent and popular work of Dr. Andrew Combe, on the physiology of digestion.

“ This table is very interesting, but the results must not be too much relied upon, or regarded as representing the *uniform* rate of digestibility. We have already seen that chymification is greatly influenced by the interval which has elapsed since the preceding meal, the amount of exercise taken, the keenness of the appetite, the state of the health and mind, the completeness of the mastication, the state of rest or exercise after eating, and various other circumstances ; and, above all, *the quantity swallowed in proportion to the gastric juice secreted*. And conse-

quently, if an experiment be made without regard to these conditions, and without any thing being recorded except the time occupied in digestion in the individual case, the conclusions deduced from it may be most fallacious. The very aliment which, taken in full quantity, remains on the stomach for hours, may, in a smaller quantity, be entirely digested in one-third of the time. Thus, in the foregoing table, two and a-half hours are set down as the average time required for the chymification of jelly, but in the 41st experiment, we find that eight ounces of that substance were entirely digested in one hour. So that, if all the other conditions are not carefully kept in view at each trial, the results cannot possibly be held as conclusive.

It may be said that, on the day of the 41st experiment, St. Martin's digestion must have been particularly good—and, in truth, it seems to have been so; for at 9 o'clock, A.M. he breakfasted on *soused tripe, pig's feet, bread and coffee*, and yet, only one hour later, no vestige of any of these savoury things remained in the stomach. What renders this result the more remarkable, is the fact, that, in another table at page 45, a simple breakfast of coffee and bread is set down as having required ~~four~~ hours for its digestion. The rapid disposal of the same elements with the addition of soused tripe and pig's feet, instead of disproving my position, evidently strengthens it, by shewing that, if *from any cause* the digesting power varies in intensity, the result obtained from the experiment on one kind of food, cannot, with any shew of reason, be considered as an accurate index of its rate of digestibility in comparison with that of other kinds.

This neglect of the other conditions is accordingly the circumstance which throws a doubt over the results not only of Dr. Beaumont's experiments, but of those of every other inquirer. Dr. Beaumont indeed candidly admits, that his were performed for the purpose of demonstrating other important principles connected with digestion, and not at all with the view of determining the comparative rates of digestibility of different kinds of aliment; and in alluding to the various requisites for a satisfactory series of experiments, he himself justly states, that this would be a Herculean task, which it would take years to accomplish. In considering the following general results, then, the reader ought to bear in mind that they are only probable and approximative, and not strictly demonstrated or certain.

As a general rule, animal food is more easily and speedily digested, and contains a greater quantity of nutriment in a given bulk, than either herbaceous or farinaceous food; but, apparently from the same cause, it is also more heating and stimulating. *Minuteness of division* and *tenderness of fibre*, are shewn by Dr. Beaumont's experiments to be two

grand essentials for the easy digestion of butcher-meat ; and the different kinds of fish, flesh, fowl, and game, are found to vary in digestibility chiefly in proportion as they approach or depart from these two standard qualities.

Farinaceous food, such as rice, sago, arrow-root, and gruel, are also rapidly assimilated, and prove less stimulating to the system than concentrated animal food. Milk seems to rank in the same class, when the stomach is in a healthy state.

The other kinds of vegetable substance are the slowest of all in undergoing digestion, and very frequently pass out of the stomach and through the bowels comparatively little changed ; and hence the uneasiness which their presence so often excites in the bowels, especially in persons of weak digestion, owing to the nerves of the intestines having a relation to *digested* food. In a given bulk they contain less nutriment, and excite the system less, than any other kind of food ; so that they are well adapted for the diet of those in whom it is necessary to avoid every kind of stimulus, and who are not subjected to great muscular exertion : but to a person undergoing hard labour, they afford inadequate support.

Liquids—soup, for example—are slow of digestion, and hence are unfit for most dyspeptic patients. Before the gastric juice can act upon them, the fluid part must be absorbed, and the mass thickened to a proper consistence for undergoing the usual *churning* motion. On examining the contents of the stomach an hour after St. Martin had dined on beef-soup, Dr. Beaumont found that the absorption of the watery part had been carried so far, as to leave the remainder of even a thicker consistence than after an ordinary solid meal. When drink is swallowed, it is carried off in the same way by absorption, and is not digested or allowed to pass through the pylorus. One purpose of this provision seems to be to prevent the gastric juice from being rendered inefficient by too much dilution.

When the food on which an animal lives is of a highly concentrated kind, and contains much nourishment in a small bulk, the apparatus of organs provided for its digestion is on a correspondingly small scale in point of extent. Thus, in carnivorous animals, whose food is, bulk for bulk, the most nutritious of all, the stomach and intestines are simple and short, the latter not exceeding in length more than from one to four or five times that of the body. In herbivorous animals, on the other hand, whose food is sparingly nutritious, and therefore requires to have a large bulk or volume, the stomach, as we saw in a former chapter, is greatly more complicated, and the length of the intestines enormously increased. Man, being intended to feed on both animal and vegetable

substances, possesses an organization which holds an intermediate place between the two extremes. In him, neither are the intestines so short as in carnivorous animals, nor have they the complexity and length characteristic of the herbivorous—thus clearly shewing the intentions of Nature in regard to his food, and at the same time allowing him a considerable latitude of adaptation when the force of circumstances for a time denies him access to any variety.

Animal food being in general more quickly digested than vegetable, and a simpler organization being sufficient for its conversion into chyme, many physiologists have inferred that this was owing to its being already of an animal nature, and therefore requiring scarcely any change to fit it for becoming a constituent part of the living fibre. But I agree with Dr. Beaumont in thinking that this explanation is more gratuitous than philosophical, and that the process of chymification implies almost as complete a change in the one instance as in the other. In both, the operation of the gastric juice seems to be entirely analogous. In both, a complete solution takes place, and the chyle into which animal food is ultimately converted bears no greater resemblance to the future animal fibre, than does that produced from vegetable aliment. Thus the chyle of a horse, which lives exclusively on vegetables, has quite as great a resemblance to its future muscle, as that of a tiger, a lion, or a fox has to *its* future produce. Besides, whether the food be animal or vegetable, the ultimate result of digestion is always the formation of *new animal matter*; but in the former case, the nutritive particles are mixed up with a smaller proportion of innutritious matter than in the latter, and consequently a larger quantity of them can be extracted from a given bulk in a shorter time, than in the case of vegetables. There are most probably also minute differences in the chemical composition of the chyle derived from different kinds of food; but its general nature—its fitness for forming new animal tissue—and that of the process by which it is produced, are always the same.

Animal food, it is true, affords a more stimulating nutriment than farinaceous and other kinds of vegetable aliment, and hence it is avoided in diseases of excitement. But it seems to me that this stimulus is owing not only to its own inherent properties, but also to its more highly concentrated state, and to the much greater quantity of chyle which is derived from it than from an equal bulk of vegetable aliment. From the numerous experiments of injecting water, poisons, and other substances into the veins, performed by Majendie and others, we have direct proofs that the same agent which, introduced rapidly into the system, will sometimes act so powerfully as to destroy life, will excite scarcely any perceptible disorder if introduced very slowly. Analogy,

therefore, bears us out in believing that the rapid admixture of very nutritious chyle with the blood may over-stimulate the system, when its more gradual introduction would have produced no such effect. At the same time, there can be no doubt that there is also a greater inherent stimulus in animal than in vegetable aliment.

It seems to be partly for the purpose of obviating the evil of the too rapid introduction of nutriment, and partly for that of varying the stimulus, that Nature has rendered a certain bulk of food advantageous to digestion, and decreed that no animal can long retain its health if fed on highly concentrated aliment alone. Dogs fed on oil or sugar, which are almost wholly converted into chyle, become diseased and die in a few weeks; and, as Dr. Paris has acutely remarked, the very capacity of our digestive organs is a proof that Nature never intended them for the exclusive reception of highly concentrated food. Dr. Paris refers to post-horses fed chiefly on beans and corn, as instances among the lower animals of the insalubrity of too condensed nutriment, and shews that they live constantly on the brink of active disease, and every now and then require bleeding, laxatives, and emollients, to keep them in condition. Sportsmen, boxers, and others, who train themselves for severe exertion, are additional examples shewing that a similar mode of living induces a morbid tension of the system which cannot be long kept up without danger. The Kamtschatdales sometimes live with impunity for months on fish-oil, by wisely mixing it up with saw-dust or other indigestible vegetable fibre.

If the preceding explanation of the more rapid digestion of animal than of vegetable substances, and the higher stimulus which they afford, be correct, the common notion of the former being more digestible than the latter *solely* because there is a greater analogy between animal food and the system which it goes to nourish, and therefore a smaller change to be undergone, necessarily falls to the ground. If it be true—which it seems to be—that, *in the natural state*, in a temperate climate, animal food is more easily digested than vegetable, the fair inference ought rather to be that the system requires the former in larger proportion than the latter, and that the gastric juice is purposely constituted with reference to this circumstance. Accordingly, in the Arctic Regions, where the climate renders great stimulus necessary, animal food, of to us the most indigestible kind—that consisting of pure fat and oil—is eaten in immense quantities, and digested with enviable facility; while in India and other tropical climates, where much less stimulus is required, the natives digest vegetable aliment with at least equal ease and satisfaction.

If, as Dr. Paris imagines, animal food owes its digestibility simply to

its possessing 'a composition analogous to that of the structure which it is designed to supply,' and therefore requiring 'little more than division and depuration,' instead of the alleged 'complicated series of decompositions and recompositions which must be effected before vegetable matter can be animalized or assimilated to the body,'*—it follows that butcher-meat must in all climates and situations be more digestible than vegetables; and that *raw* meat, which has the greatest analogy of all to the structure of the body, must require still less digestive power for its solution and assimilation than cooked meat. These propositions, however, are wholly at variance with experience: in particular, the effect of cooking is unquestionably to induce a change of composition subversive of the analogy on which Dr. Paris rests his opinion.

That the easier digestibility of animal food in man arises chiefly from its greater adaptation to the qualities of the gastric juice, and not from any such analogy as that now alluded to, is rendered still more probable by the fact, that in him the gastric fluid contains scarcely any free acid, except where the diet has consisted for some time principally of vegetables; whereas it always contains a considerable proportion of acid in herbivorous creatures. In the latter, moreover, the analogy is quite as great between animal substances and their own structure as in man, and yet to a cow, beef is much more indigestible than grass, notwithstanding the 'decompositions and recompositions' which the latter is supposed to require before becoming animalized. Dr. Beaumont is therefore quite justified in maintaining, that the process of digestion implies as complete a solution and recomposition in the case of animal as of vegetable substances; and that the rapidity with which the chymification of either is effected *depends more on its adaptation to the properties of the gastric juice provided by Nature for its solution, than on the closeness of resemblance of its own composition to that of the body of which it is to become a part.*"

* Paris on Diet, p. 93.

ON
MORBID SENSIBILITY
OF THE
STOMACH AND BOWELS,

ATTENDED WITH OBVIOUS DISORDER IN THE DIGESTIVE ORGANS.



I HAVE stated that morbid sensibility or excitability of the gastric and intestinal nerves may be divided into two orders or classes, viz.—that in which there is *sensible* pain, irritation, or other disorder in these organs, as well as various sympathetic affections, mental and corporeal, dependent on them—and that, in which the morbid sensibility or irritability of the digestive apparatus is, as it were, masked, and only shews itself in a variety of morbid feelings and conditions of other organs and parts, as well as in the intellectual functions. The *first* class or order has been much more accurately investigated than the *second*—and, therefore, I shall content myself with a very brief view of the prominent features of the first order.

SECT. IV.—PHENOMENA OF REPLETION.

THE phenomena which supervene on the introduction of *too large a quantity* of food and drink into the stomach, have been sometimes confounded with the symptoms of indigestion, to which indeed they bear considerable resemblance. Thus, a man in perfect health, and with an excellent appetite, is allured by variety of dishes, agreeable company, provocative liquors, and pressing invitations, to take food more in accordance with the relish of appetite than the power of digestion. No inconvenience occurs for an hour or two; but then the food appears to, and actually does, swell in the stomach, occasioning a sense of distention there, not quite so pleasant as the sensations attendant on the various changes of dishes, and bumpers of wine, or other drink. He unbuttons his waistcoat, to give more room to the labouring organ underneath: but that affords only temporary relief. There is a struggle in the stomach between the *vital* and the *chemical* laws, and eructations of air or acid proclaim the ascendancy of the latter. The nerves of the stomach are irritated by the new and injurious compounds or extractions, and the digestive power is still farther weakened. The food, instead of being changed into bland and healthy chyme in a couple or

three hours, and thus passed into the duodenum, is retained for many hours in the stomach, occasioning a train of the most uneasy sensations, which I need not describe, but which amply punish the transgressor of the laws of nature and temperance. Instead of sound sleep, the Gourmand experiences much restlessness, and what is called *fidgets*, through the night—or, if he sleeps, alarms his neighbours with the stifled groans of the night-mare. In the morning, we perceive some of those sympathetic effects on other parts of the system, which, at a later period of the career of intemperance, play a more important part in the drama. The head aches—the intellect is not clear or energetic—the eyes are muddy—the nerves are unstrung—the tongue is furred—there is more inclination for drink than food—the urinary secretion is turbid, or high-coloured—and the bowels very frequently disordered, in consequence of the irritating materials which have passed into the intestinal canal imperfectly digested. This can hardly be called a fit of indigestion, though, even here, we find many of the leading phenomena which afterwards harass the individual without such provocation. It is a fit of repletion, or *intemperance*, strictly speaking, and repetition seldom fails, in the end, to induce that morbid sensibility or irritability of the stomach and bowels which forms the characteristic feature of indigestion.

I have called the above a *fit of repletion or intemperance*, and, of course, it is rather an extreme case, though by no means very uncommon. Nine-tenths of civilized society commit more or less of this intemperance every day. The over-distention and the inordinate daily stimulation weaken the powers of the stomach, in the end, according to a law universally acknowledged in physiology. Any organ that is *over-exerted* in its function, is, sooner or later, weakened—nay, the remark applies to the whole machine. Nothing is more common than to see originally good constitutions, broken up prematurely by inordinate labour, whether of body or of mind. The *debility* thus induced, whether of a part or of the whole machine, is invariably accompanied by *irritability*. The *former* has been recognized, in all ages as the parent of the *latter*. In this way a MORBID SENSIBILITY may become established in the digestive organs; but it does not require a sumptuous table and a variety of wines to induce the above-mentioned phenomena. In every class of society down to the very lowest, the quality or quantity of food and drink is perpetually offending, more or less, the nerves of the stomach and bowels, and thus producing the same phenomena as among the rich, though modified by their habits of life. If we do not find among the lower classes the same amount of hypochondriacal and nervous affections, we observe a still greater proportion of purely corpo-

real maladies, as organic diseases of the stomach, lungs, heart, liver, and other parts, occasioning a far greater range of mortality than in the upper classes. Besides, the numerous other causes of a moral and physical nature which lead to this condition of the digestive organs, are found operating among all classes, without exception.

If then when in health, we experience any degree of the foregoing symptoms after our principal meal—if we have a sense of distention, eructations, disturbed sleep, with subsequent languor of body or mind, there was intemperance in our repast, if that repast did not amount to two ounces of food, or two glasses of wine. But confirmed INDIGESTION is not so much induced by this violence habitually offered to the stomach, as by the re-action of other organs (whose functions have been disturbed sympathetically) on the organ of digestion. The nervous system and the liver repay with interest, after a time, the injuries they sustain from the stomach. The gastric fluid, so much under the influence of the nerves, becomes impaired—the hepatic secretion vitiated—and then the phenomena of morbid sensibility and of indigestion gradually acquire a higher degree of intensity, by the additional sources of irritation, thus generated, multiplied, and reflected from one organ on another. Add to these, the effects of the mind on the body—where moral causes are out of the question, and where the morale is solely troubled by the physique.

SECT. V.—PHENOMENA OF DYSPEPSIA AND INDIGESTION.

BEFORE proceeding to an analysis of particular symptoms which I conceive to be indicative of the MORBID SENSIBILITY now under investigation, it may be proper to exhibit a general sketch of the more prominent phenomena attendant on this class of complaints. They may be divided into those which appertain to the digestive organs themselves, and those which are sympathetic or affecting distant parts.

The first division will be found to include those phenomena which have just been shewn to arise during a *fit of repletion*, or intemperance—affording a proof that REPLETION is at least one of the many causes or steps which lead to indigestion, and its characteristic condition, MORBID SENSIBILITY. It must be remembered, however, that in no individual can we expect to find the whole of the symptoms here enumerated, though few dyspeptics will fail to exhibit a considerable number of them.

At a certain period, varying from half an hour to two hours, after food, more especially after dinner, but often after breakfast or tea, the individual experiences a sense of uncomfortable **FULNESS** in the stomach. Of all symptoms, this is the most common and the most constant. It increases during the progress of imperfect digestion, and evidently depends on the swelling of the food in the stomach, or the disengagement of air or gas. It is often accompanied by a sense of weight and also constriction, as if the clothes were too tight round the body. Females are then glad to unloose their stays, which gives a temporary relief. **HEARTBURN** is not an unfrequent sequence, and then discharges of air and acid, the latter burning the throat, and causing a very uneasy sensation from the cardiac orifice of the stomach up to the palate. The eructations are often very *rancid*, especially if oily or fat food have been taken. A feeling of disgust, or even nausea, not unfrequently takes place; and, where the nerves of the stomach are in a very irritable state, vomiting of half-digested aliment occurs. In some people there is even a sense of tightness in the chest, impeding the free action of breathing, partly depending on the distention of the stomach. Head-ache, giddiness, faintness, are occasional attendants on this state of the stomach. When the organ is thus distended, there is not only tenderness on the least pressure at the pit of the stomach, but often actual pain there, till the organ is evacuated either by vomiting, or by the completion of the first digestion. In others, a ravenous appetite exists, which can scarcely be appeased—a sense of emptiness or sinking soon succeeding to fulness and distress.

Some or many of these symptoms continue to annoy the individual for several hours; and even when the food has passed, in a more or less digested state, into the duodenum, the individual is harassed with flatulence, and most uncomfortable distention in the bowels. In many cases, indeed, the duodenum is even more morbidly sensible than the stomach, and during the passage of the nutriment through that organ the sufferings are far more tormenting than during the digestion in the stomach. This is not at all wonderful, when we consider that it is into this bowel the bile is first poured, and that the bile is generally depraved in this class of complaints. The duodenum is also more exquisitely sensible than the stomach itself, and is more productive of remote and mysterious sympathies.

After a long and painful digestion then, and passage of the chyme along the upper bowels, there is either an irritable or torpid state of the colon to be contended with. Very many are unable to get free evacuations without assistance; while others are teased with several inefficient motions, a sense of something left behind being still felt. In such cases,

the motions are rarely natural and formed, being generally of various colours and consistencies, from white to jet black, forming a heterogeneous mixture of slime, bile, glairy mucus, lumps, or a pultaceous and tenacious mass like yeast, exhaling an unnatural odour. There are often long white stringy substances like fat passed, which are erroneously thought to be pieces of worms.

It is a curious fact, that, when the above-mentioned symptoms are strongly marked, and very distressing in the stomach and bowels, the sympathetic effects on remote parts of the body, and also on the mind, are far less than where there is merely MORBID SENSIBILITY in the first passages, attended with few of the phenomena described as indicating what is called indigestion. But more of this hereafter.

When this digestion is finished, and the fæcal remains discharged, the dyspeptic patient has often an interval of comparative comfort, till the same train of symptoms is renewed the next day. But too often the sleep is disturbed with harassing dreams or night-mare, and the individual rises in the morning, quite unrefreshed, with smarting eyes, thickly coated, or even a dry rough tongue, bitter taste in the mouth, languor, irritability, despondency, and little or no relish for breakfast.

Now, on reviewing the foregoing phenomena, there is not one of them which does not indicate DEBILITY and IRRITABILITY of the stomach and bowels. The distention, the extrication of gas, the acid and rancid eructations, prove that the digestive power of the stomach is *weakened*; while all the various uneasy sensations felt in the line of the alimentary canal evince the morbid sensibility or excitability of its nerves.

It may appear an incongruity to consider the organic sensibility or irritability of the stomach and bowels as morbidly increased, at a time when the latter (the bowels) are generally supposed to be in a state of torpor, as evinced by constipation. But the *organic sensibility* of the bowels may be greatly perverted and exalted, and yet the muscular or peristaltic action irregular or even torpid; for it is well known that the nerves of motion and of sensation are not the same. Besides, it is a law of the animal economy, that when nervous sensibility is too much exalted in one part, it is too little so in some other. Thus, we often see the stomach and upper bowels in a state of great irritability, whilst the lower bowels are quite torpid, and will not propel forward their contents. Gastric irritability and vomiting are usually accompanied by constipation. Finally, I may observe that the *functions* of the stomach, liver, and intestines, may be *torpid*, while the *organic sensibility* of their nerves may be in a state of morbid excitement. We see the functions of most organs suspended when they are in a state of inflammation,

which must be accompanied by a state of excitement of their nerves; and the same may be said of irritation. Very often, however, constipation is not an accompaniment of morbid sensibility of the stomach and upper bowels. The large intestines are not unfrequently in a state of irritation as well as the small.

All the exciting or occasional causes, physical and moral (which will be presently enumerated), are such as produce unequivocally this state of *debility and irritability*; while all the remedies that remove this disordered condition of the digestive apparatus, are precisely such as lessen irritability and restore tone to the organs. On this account, I think I am fully authorized to conclude that MORBID SENSIBILITY is a characteristic condition which is seldom if ever absent, in what is called indigestion, or dyspepsia. It will be proved that the same condition often obtains where the common phenomena of indigestion are wanting, and where the effects of this MORBID SENSIBILITY are only felt in distant parts of the body, and in the mental functions. Before proceeding to the latter subject, I will venture to make some remarks on individual symptoms, and on some popular opinions and doctrines drawn from these symptoms.

The progressive march of the disorder has been artificially divided into stages, and considerable importance attached to the division. The marks by which the stages are supposed to be cognizable do not appear satisfactory to me, or accord with my own observations. Dr. Philip lays down a deviation from healthy appearance in the motions as marking "an important step in the progress of the malady." "It (the alvine discharge) sometimes contains," says Dr. Philip, "uncombined bile, sometimes it chiefly consists of bile; its colour, at other times, is too light, more frequently too dark, at length almost black; at different times it assumes various hues, sometimes inclining to green, sometimes to blue, and sometimes it is mixed with, and now and then wholly consists of, undigested bits of food." If these be marks of an important step in the progress of indigestion, I can only say, that the above conditions of the biliary and other secretions—may often be seen where there is no proof of indigestion at all, and that they are frequently absent, when there is the highest degree of indigestion, or at least of dyspepsia. That they may mark a *disturbance or disorder in the hepatic function*, there can be no doubt; but that they are necessary attendants on any *particular stage* of indigestion, I cannot admit, consistently with my own observations.* The functions of the liver, indeed, and the

* For additional proof, see Abernethy, p. 72, *et seq.* See, also, Mr. Cooke's work on Indigestion.

stomach are so intimately linked, that a derangement of one organ, and especially of the liver, is very commonly productive of derangement in the other, and it is difficult to say, in many cases, which has the priority. The appearance of the alvine discharge is, unquestionably, one of the best indications of the state of the hepatic function, but I cannot admit that is so good an index of what are called nervous and general dyspeptic symptoms, as Dr. Philip seems to consider it.

When this combination of gastric and hepatic disorder obtains, whichever may have had the priority, the term "INDIGESTION" is merely a conventional term, which is meant to designate a complication, in which indigestion forms at most but a part—and sometimes no part at all. I own that it is hard for any one but a German to give such a name to this complication as may convey a clear idea of its nature. By the term "MORBID SENSIBILITY OF THE STOMACH AND BOWELS," I mean a disordered condition of the gastric and intestinal nerves, in which their natural sensibility is changed, being morbidly acute, for the most part, or otherwise perverted. By this term, I merely designate a fact or condition which, in my opinion, obtains much more generally in this class of maladies than the state called indigestion—indeed, I think I may aver, that it is never absent in the functional disorders of the digestive apparatus now under review, and that it forms the connecting link between these disorders, and the various sympathetic affections of other and distant parts of the system. This is my apology for the term.*

When the combination of liver and stomach affection is established, we have a train of well-marked phenomena indicative of their co-existence. The appetite is fickle, being sometimes ravenous, at others almost annihilated, and sometimes whimsical. Whatever is eaten produces more or less of distention, discomfort, or even of pain in the stomach, the duodenum, or in some portion of the alimentary canal, till the fecal remains have been evacuated. On this account the bilious

* Since the third edition of this Essay was printed, I observe, in a work of Professor Schmidtman, of Berlin, on Dyspeptic Affections, published in 1826, the following passage, which is completely in accordance with the doctrine which I have endeavoured to maintain in this Essay.

"Quantum investigando (says he) et cogitando potui assequi, cardialgia primaria (by which he designates dyspepsia) *semper fundatur in nimia et immodica ventriculi sensibilitate*. Absente tali causa, ut mihi videtur, morbus vix oritur."—SUMMA OBSERVATIONUM MEDICARUM EX PRAXI CLINICA TRIGINTA ANNORUM DEPRORPTARUM. Berlin, 1826.

It is also curious, that a French physician (M. Barras) who, like the Author of this Essay, was a severe sufferer from dyspepsia, in some of its worst forms, comes

and dyspeptic patient is very anxious to take aperient medicine, as temporary relief is generally experienced by free evacuations. I say *temporary* relief; for purgation will not remove the cause of the disease; it only dislodges irritating secretions, soon to be replaced by others equally offensive. Indeed the usual routine of calomel at night and black-draught in the morning, if too often repeated, will keep up rather than allay irritation in the bowels, and produce, as long as they are continued, morbid secretions from the liver and whole intestinal canal. It is astonishing how long scybala and irritating undigested matters will lurk in the cells of the colon, notwithstanding daily purgation. Many instances have come to my knowledge, where portions of substances, eaten two, three, and four months previously, have at length come away in little round balls, enveloped with layers of inspissated mucus, or in a black kind of powder, or thin lamina like tea-leaves soaked. These scybala or undigested matters keep up an *irritation*, generally without any distinct pain, in the bowels; and the effects of this irritation are manifested in distant parts by the most strange and anomalous sensations that appear to have no connexion with the original cause. The practitioner is thrown off his guard by the belief that, after repeated cathartics which scour the bowels, there cannot be any thing left there. But this is a great mistake. It is not the most powerful purgative that clears the bowels most effectually. If irritation be first allayed by hyosciamus or other anodyne, and then a mild cathartic exhibited, the evacuations will be much more copious than if the most drastic medicines are exhibited without previous preparation.

In addition to the various appearances of the motions, as described by Dr. Philip, I may add that, although the liver is often very torpid in this disease, and consequently the fæces of a clay-colour and devoid of natural smell; yet there is, in many cases, a copious secretion of viscid bile, which appears either distinct in the motions, or, when incorporated with them, renders them as tenacious as bird-lime. It is exceedingly difficult

to the very same conclusion respecting the true nature of the disease—**MORBID SENSIBILITY** of the gastric and intestinal nerves. “Alors (says he), la maladie ne paraît consister que dans une **MOBILITÉ EXTRAORDINAIRE** de l'appareil sensitif, et elle n'a pour principal symptôme, que **L'ABERRATION DE LA SENSIBILITÉ** et des fonctions de cet appareil.”—*Traité des Gastralgies et des Enteralgies*.

The German physician resided a long time in a country where stomach-affections were particularly prevalent, and, therefore, had ample experience in the complaint. The French and English writers suffered in their own persons; and this identity of ideas must surely prove a very strong argument in favour of the truth of the doctrine embraced by all three in different and widely-distant countries.

to separate these motions from the bottom of the utensil by affusions of water. It is this tenacious ropy bile which hangs so long in the bowels of some people, and, by keeping up a constant irritation of the intestinal nerves, produces a host of uneasy sensations in various parts of the body, as well as fits of irritability in the mind.

In some cases, where this poisonous secretion lurks long in the upper bowels, the nerves of which are so numerous and the sympathies so extensive, there is induced a state of mental despondency and perturbation which it is impossible to describe, and which no one can form a just idea of, but he who has felt it in person. This poison acts in different ways on different individuals. In some, whose nervous systems are not very susceptible, it produces a violent fit of what is called bilious head-ache, with excruciating pains and spasms in the stomach and bowels, generally with vomiting or purging, which is often succeeded by a yellow suffusion in the eyes, or even on the skin. Severe as this paroxysm is, the patient may thank his stars that the poison vented its fury on the body instead of the mind. Where the intellectual faculties have been much harassed, and the nervous system weakened and rendered irritable, the morbid secretion acts in that direction, and little or no inconvenience may be felt in the real seat of the offending matter. The mind becomes suddenly overcast, as it were, with a cloud—some dreadful imaginary or even unknown evil seems impending; or some real evil, of trifling importance in itself, is quickly magnified into a terrific form, attended, apparently, with a train of disastrous consequences, from which the mental eye turns in dismay. The sufferer cannot keep in one position, but paces the room in agitation, giving vent to his fears in doleful soliloquies, or pouring forth his apprehensions in the ears of his friends. If he is from home when this fit comes on he hastens back—but soon sets out again, in the vain hope of running from his own wretched feelings. If he happen to labour under any chronic complaint at the time, it is immediately converted (in his imagination) into an incurable disease; and the distresses of a ruined and orphaned family rush upon his mind and heighten his agonies. He feels his pulse and finds it intermitting or irregular—disease of the heart is threatened, and the doctor is summoned. If he ventures to go to bed—and falls into a slumber, he awakes in the midst of a frightful dream, and dares not again lay his head on the pillow. This state of misery may continue for 24, 36, or 48 hours; when a discharge of viscid, acrid bile, or other vitiated secretion, dissolves, at once, the spell by which the strongest mind may be bowed down to the earth, for a time, through the agency of some irritating material on the intestinal nerves! Or it may go off without any evacuation of offending matter,

leaving us in the dark as to the cause of such a series of distressing phenomena. I believe such a train of symptoms seldom obtains, except where there has been a *predisposition* to morbid sensibility, occasioned by mental anxiety, vicissitudes of fortune, disappointments in business, failure of speculations, domestic afflictions, too great labour of the intellect, or some of those thousand moral ills, which render both mind and body so susceptible of disorder.

Were I at liberty, I could relate some almost incredible examples of the extent to which the most towering intellect may be subjugated by an ignoble enemy in the shape of a corporeal disorder. I lately saw a gentleman of brilliant talents and prolific genius, who could sit down and write extemporaneously, whole pages of superior poetical effusions, with scarcely an effort of the mind, and who would yet, from a sudden derangement of the digestive organs, be so completely and quickly prostrated in intellectual power, as not to be able to write three lines on the most common subject. On a late occasion, when he had merely to communicate an official transaction that required not more than half a dozen lines in the plainest language, he could not put pen to paper, though the attempt was fifty times made in the course of two days. At length, he was forced to throw himself into a post-chaise and perform a long journey, to deliver orally what might have been done, in one minute, by the pen. In half an hour after this task was performed, he sat down and wrote an ode descriptive of his own state of nervous irritability, which would not have done discredit to the pen of a Byron!

The author of this Essay has, himself, been so enervated by a fit of what is called indigestion, as to be utterly incapable of breaking the seal of a letter for twenty-four hours, though, to all appearance, in good health at the time. Equally astonishing and unaccountable is the degree of timidity, terror, incapacity, or whatever other magic-like spell it is, which annihilates, for a time, the whole energy of the mind, and renders the victim of dyspepsia afraid of his own shadow—or of things more unsubstantial (if possible) than shadows! It is not likely that the great men of this earth should be exempt from these visitations, any more than the little; and if so, we may reasonably conclude, that there are other things besides CONSCIENCE, which “make cowards of us all”—and that, by a temporary gastric derangement, many an enterprise of “vast pith and moment” has had its “current turned awry,” and “lost the name of action.” The philosopher and the metaphysician, who know but little of these reciprocities of mind and matter, have drawn many a false conclusion from, and erected many a baseless hypothesis on, the actions of men. Many a happy and lucky thought has sprung from an empty stomach! Many an important undertaking has

been ruined by a bit of undigested pickle—many a well-laid scheme has failed in execution from a drop of green bile—many a terrible and merciless edict has gone forth in consequence of an irritated gastric nerve ! The character of men's minds has often suffered from temporary derangements of the body ; and thus, health may make the same man a hero in the field, whom dyspepsia may render an imbecile in the cabinet !*

In some constitutions, especially where there has been gout in the family, or some hereditary disposition to disease, these attacks of vitiated secretion in the glandular organs of the digestive apparatus, seem almost necessary from time to time, to clear, as it were, the constitution, like paroxysms of gout itself. It is hardly possible, in such cases, to prevent entirely the recurrence of these storms, even by the strictest attention to diet, regimen, and medicine ; but, if these precautions are not taken to restrain the violence and lengthen the intervals, the attacks become dangerous, and derangement of function may ultimately end in disease of structure. On this account, people should not consider their temperance and vigilance as thrown away, because these periodical visitations cannot be entirely prevented by the most skilful physicians. Every thing in this world is good or bad by comparison. There is a defect in such constitutions, whether hereditary or acquired, and they must be contented with keeping such defect in check, and preventing its assuming a much worse form than that in which it presents itself.

It is under the influence of such paroxysms as these, I am thoroughly convinced, that nine-tenths of those melancholy instances of suicide, which shock the ears of the public, take place. Nothing is more common than to hear of these catastrophes, where no ostensible cause could be assigned for the dreadful act. There might be no real moral cause—but there was a real physical cause for the momentary hallucination of the judgment, in the irritation of the organ of the mind, very often through sympathy with the organs of digestion. Such is the intimacy of connexion, and reciprocity of influence between the intellectual and corporeal functions !

The foregoing is a sketch of a high degree of biliary irritation acting on the mental faculties through the medium of the intestinal nerves. But there are a thousand shades of this irritation displaying themselves more in the temper or moral character, than in the corporeal functions. These I cannot at present stop to delineate, as they will be alluded to further on.

* Since the seventh edition of this work was printed, a highly-gifted patient, residing not a thousand miles from Abbotsford, sent me a passage from the writings of Voltaire, containing an almost identical sentiment. I can conscientiously declare that I did not copy from Voltaire.—*10th Edit.*

In the complicated disease under consideration, there are various functions disturbed, and phenomena produced, which are all referrible to one common source. The tongue is furred, or white, especially in the middle and at the root, and, when there is much irritation in the stomach or duodenum, the papillæ are elevated, and the edges and tip red. There is often a disagreeable taste in the mouth, especially in the mornings; and some people complain of a peculiar sense of constriction at the root of the tongue and about the fauces, which cannot be accounted for on any other principle than that of sympathy with the stomach. The mouth feels clammy, and there is a heavy odour on the breath. The clean red and shining tongue, whether moist or dry, is indicative of serious irritation, if not inflammation, in the lining membrane of the stomach or bowels. It resembles a beef-steak, or a dissected muscle.

The eye may or may not be tinged yellow, but there is a peculiar muddiness or lack-lustre in the coats of that organ, with an expression of languor or irritability in the countenance, with sense of weakness, especially about noon, which are singularly characteristic of the malady, and indicate, with unerring certainty, its existence to the experienced physician. In people beyond the age of 45, there is usually a greater defect of vision, particularly by candle-light, when the digestive organs are disordered, than when the functions of the stomach and liver are in good condition.* The urinary secretion is generally disturbed—being either turbid, or high-coloured, with more or less of pink or white sediment, or with an oily kind of film floating on the surface. It is, for the most part, however, rather scanty than otherwise, with occasional irritation in passing it. Sometimes, when the individual is in a state of nervous irritation, it is as limpid as pump-water, made every half-hour, and in large quantity in the aggregate. It is curious that this clear and insipid water should be more irritating to the bladder than the most concentrated and highly saline urine. The individual cannot retain more than a few spoonfuls at a time, without great inconvenience.

The skin and its functions are very much affected in bilio-dyspeptic complaints. It is either dry and constricted, or partially perspirable, with feelings of alternate chilliness and unpleasant heat, especially about the hands and feet. The skin, indeed, in these complaints, is remark-

* Many cases of *muscæ volitantes*, and even spectral illusions, are clearly dependent on gastric and intestinal irritation, of which I have seen some curious examples. Mr. Abernethy has related an instance of these visual deceptions in his own person. At the same time I would not advise the patient to trust to this chance, and thus to neglect the head, which may be the real seat of the complaint.—10th Edit.

ably altered from its natural condition; and the complexions of both males and females are so completely changed, that the patients themselves are constantly reminded, by their mirrors, of the derangement in the digestive organs. The intimate sympathy between the external surface of the body and the stomach, liver and alimentary canal, is now universally admitted, and explains the reciprocal influence of the one on the other. Many of the remote causes, indeed, of indigestion and liver-affection will be found to have made their way through the cutaneous surface. On the other hand, a majority of those eruptions on the skin, which disfigure the countenance and cause so much irritation and suffering in various parts of the body, are often traceable to disorder in the stomach and bowels. The purely local treatment of these cutaneous affections, by external applications, is generally ineffectual; whereas a restoration of healthy function in the digestive organs, is almost sure to remove them, with the aid of a very few outward applications.

One of the most striking phenomena attendant on derangement of function in the liver and alimentary canal, is loss of flesh and of muscular power. The emaciation is easily accounted for by the deficient supply of nutriment from an imperfect apparatus: and, it is not a little remarkable, that the liver-affection accelerates the loss of flesh much more than the stomach-complaint. The symptoms of dyspepsia may be very severe indeed, and yet emaciation will be very trifling; but let the function of the liver be much disturbed, and the flesh disappears with great rapidity. This is a strong proof that the bile is essential to the change of our food into healthy chyle, as the experiments of Sir B. Brodie shew.

But the loss of strength, in this complaint, is out of all proportion to the waste of flesh. This is one of the most characteristic features of the disease, and is much more connected with nervous irritation in the stomach and bowels than with disorder of the liver. I have seen this prostration of strength in the highest degree where the biliary secretion was perfectly healthy, but where the nerves of the *primæ viæ* were extremely irritable. It is a *sense* of debility rather than actual debility. It is infinitely more distressing than real weakness. The least exertion, even that of stooping to take up a book, or stretching out the arm to take hold of any object, will cause such a feeling of inability for muscular action as quite depresses the spirits of the individual. Yet, perhaps, in less than three hours after this, when the food has passed from the stomach, or its residue from the bowels, or from some cause unknown, or perhaps connected with certain conditions of the atmosphere, the same individual will be capable of walking a mile with comparatively little fatigue. This is a point which should be particularly in-

quired into, when questioning the patient; for the state above described is not one of direct or real debility, but of temporary depression. The patient may, it is true, be much weaker than when in health; but true debility is uniform, and proportioned to the decrease of muscular fibre: whereas, the distressing sense of debility, now under consideration, is out of all proportion to the emaciation—is not uniformly the same—and is almost always greater when there is food in the stomach, or bad secretions in the bowels, than when both stomach and bowels are empty. It is, in appearance, a sympathetic debility, or temporary loss of power, from nervous irritation in the alimentary canal, however induced. The distinction between these two kinds of debility is the more necessary, as the treatment is somewhat different. Bark, wine, rich food, and tonics, are not the remedies for debility arising from gastric and intestinal irritation. The wretched feeling from this source is exasperated rather than relieved by tonics and stimulants, unless very carefully employed in combination with soothing medicine, and diet of very easy digestion. There is another kind of depression, or sinking, which is obviously referred to the stomach, and only takes place when that organ is empty. This is a very different sensation from that which has been described, and is relieved by food or cordial drink.

In respect to a symptom on which much stress has been laid by Dr. Philip, as marking an important stage of indigestion, namely, tenderness at the pit of the stomach, *on pressure*, I shall make some observations in the second part of the work.* That it exists in every stage of indigestion, I venture to affirm—and I will go one step further, for I have no hesitation in averring that, if a whole regiment of soldiers were turned out, and the region of the stomach pressed with the pointed fingers, and with the force which Dr. Philip uses, they would all wince, from the General downwards. With the following observation of Dr. Philip, I most cordially agree:—"The patient, in general, is not aware of this tenderness till it is pointed out by the physician." As for its being any criterion of organic disease in the liver, I have, in another part of the work, expressed my conviction in the negative—and that it is generally characteristic of an inflammatory state, or incipient organic disease of the pyloric orifice of the stomach, I cannot, for several reasons, admit. One of these reasons is, that there is often much more tenderness in the epigastrium, in functional disorder, than in actual and unequivocal organic disease, as in scirrhus of the pylorus, for example. Another reason is, that this tenderness in the epigastrium is frequently, if not generally, relieved by bitters and mild tonics, with light animal

* See the section on *organic disease of the liver* in the second part of this Essay.

food, which would hardly be the case if it depended on inflammatory action or incipient change of structure. A third reason is, that the dyspeptic patient in whom this tenderness is so conspicuous, is proverbial for long life, and dies, at last, without any organic disease of the stomach. Let Dr. Philip himself bear witness. "It is a curious fact," says he, "and one of the greatest importance in the treatment, *that the organic affection rarely takes place in the original seat of the disease, but in other organs with which the stomach sympathises.*" This is a slippery doctrine; for it must for ever elude the proofs afforded by the scalpel. If the patient die of tubercles in the lungs, abscess in the brain, aneurism of the heart, enlargement of the liver and its consequences, or any other organic disease, dyspepsy having previously existed, we have only to say that the inflammatory action and change of structure began in the stomach, but shifted its seat, and ended in a distant part. "Thus," says Dr. Philip, "when the body is examined after death, the patient *is said* to have died of disease of some of these parts, and there is nothing in the appearance of the organs to distinguish such affections from diseases which originate in the organs themselves." It would be very easy to turn the arms of this doctrine against itself. Organic disease of the brain, for example, very frequently shews itself more, especially at an early stage, in disordered function of the stomach, than in disordered function of the intellect—and, at such period, the patient would be said to labour under indigestion. But, as the malady advances, the functions of the brain and nervous system become unequivocally disturbed, and then it might be said the disease was extending itself sympathetically to the organ of the mind. At length, on death taking place, the brain would be found disorganized, and the stomach sound; when Dr. Philip would ingeniously explain the matter by the above mode of reasoning. Again, if sympathetic affections end so frequently as Dr. Philip imagines in organic disease, how is it that, in fatal affections of the brain from chronic disorganization, where the functions of the stomach are proverbially deranged from sympathy with the sensorium (all sympathies being reciprocal), we so rarely find any organic change in the stomach? Illustrations of this remark are innumerable. I may only just allude to a remarkable instance lately published by Dr. Chambers, and attended by myself, where a large tubercle growing in the brain shewed all, or almost all, its bad effects on the stomach for a great length of time; indeed, to the very hour of death; and yet, on dissection, the stomach was found healthy, and the seat of disease in the brain. In short, while I agree with Dr. Philip, that every part of the body sympathises readily with the stomach, whether in health or in disease, I do contend, from attentive observation and long experience, that these

sympathetic affections of distant parts end, comparatively speaking, but rarely, in organic disease; and, consequently, Dr. Philip's doctrine is calculated to excite a great deal too much alarm in the mind of the patient, as well as in that of the inexperienced practitioner. As Dr. Philip contends for inflammation as the pathognomonic character of indigestion in its second stage, it was incumbent on him to shew all the proof of which the case is susceptible. He acknowledges that when the patient dies, it is of the organic disease in a remote part, which was originally only sympathetic of the disease in the digestive apparatus, the latter being no longer the seat of disease, and, consequently, exhibiting no alteration of structure on dissection. So far, so good. But as indigestion, in all its stages, is one of the most common diseases which we meet; and as numbers of people are daily dying suddenly of other diseases or accidents, *during the second stage of indigestion*, why does not Dr. Philip bring forward proofs of inflammation and incipient organic disease of the digestive apparatus, existing in that stage, as developed by dissection? This is the way in which we arrive at the knowledge of incipient changes of structure in other diseases not mortal in their early stages. But Dr. Philip offers us no such proof, and the conclusion is, that he cannot. It will hardly be considered an answer to this objection, that the pyloric orifice of the stomach is often found indurated in dram-drinkers. No one can deny that disease of the stomach may be brought on by such practices; but these cases have little analogy with the common dyspepsia so prevalent in civilized life, where intemperance is on a very moderate scale. I have admitted more than some physicians will admit,* that sympathetic affection of the chest, from disorder of the liver and digestive organs, may and does end occasionally in organic disease. But we must recollect that disease of the lungs destroys nearly a fourth of the population, and that it is highly probable that latent tubercles existed previously to the disorder of the stomach, in almost all those who die of dyspeptic phthisis. The disease is, therefore, *called into action* rather than *produced* by the disorder of the digestive organs. Perhaps, the same observation may partly apply to the other organic diseases *sympathetically* called forth.

But to return to the subject of tenderness at the epigastrium. I contend, for the reasons already stated, and for many others which I could adduce, that it is owing to *irritation* rather than inflammation, in a great majority of cases, and, consequently, that it is no criterion of the latter disease in this class of complaints. The indiscriminate ap-

* See Dr. Paris, for example, who denies that there is, or can be, any such thing as dyspeptic phthisis.

plication of leeches for its removal, has, to my knowledge, very often aggravated the disease. The counter-irritation of a blister or tartar-emetic plaster is far more effectual, and harmonizes with the true nature of the tenderness—*morbid sensibility* of the gastric and duodenal nerves. In my own person, and those of many others, I clearly ascertained this point, and found that tonics and bitters more effectually relieved this tenderness than leeches and blue-pill.

The same may be said of *pain* in the stomach, independent of pressure, of which, by the bye, Dr. Philip takes no notice, in the second stage of indigestion. This is a very common feature of the disease; but affords no criterion of the existence of inflammation. On the contrary, it is far more severe in functional disorder than in unequivocal inflammation of the stomach, and is relieved, as every one knows, by tonics and even stimulants, rather than by leeches or depletion. It is not a little remarkable, that Dr. P. should bring forward pain on strong *pressure* as indicative of inflammation, while he passes over severe pain, which is so very commonly complained of *independent* of pressure. But the fact is, that neither tenderness nor pain in the stomach of a dyspeptic patient affords any proof of inflammation in that organ.

Of the fulness at the epigastrium I shall speak more in the second part of this Essay, and endeavour to shew that it is often more apparent than real, being produced by the emaciation so common in this class of complaints. That it is usually noticeable in indigestion I admit; but that it marks any particular period or stage of the disease I never could discover. It is, I believe, much more frequently the effect of flatus than of organic disease.* If the liver be enlarged, so as to cause this fulness, there will then be *hardness* of the part, as well as fulness, and the edge of the organ will be felt through the parietes. The cause will then be unequivocal.

The observations which I have made on tenderness at the pit of the stomach will equally apply to what Dr. Philip has advanced respecting a peculiar *hardness of the pulse*, as indicating a change in the nature of the disease from irritation to inflammation. The longer a practitioner lives, and the more he sees of disease, the more he will be convinced that the pulse is a “*res fallacissima*” in indigestion as well as in other

* Dr. Philip, in his Appendix, makes this fulness to depend on *debility* of the duodenum, the effect of irritability. When the mucous membrane of other portions of the bowels, however, is inflamed or irritable, we do not find that they will thus bear accumulations in contact with them. I am, therefore, still of opinion, that this epigastric fulness is more frequently caused by flatus than by inflammation and accumulation in the duodenum.

complaints. On this subject, I must take the liberty of saying, that Dr. Philip appears to have refined to an excessive degree of minuteness. If a physician's whole sense was concentrated in the point of his forefinger, he would hardly be able to follow Dr. Philip in his diagnostic of hardness in a dyspeptic pulse. This hardness is often to be recognized only by "a particular way" of feeling the pulse. "If the pressure be gradually lessened till it *comes to nothing*, it often happens that a *distinct hardness* of the pulse is felt before the pulse wholly vanishes under the finger, when no hardness can be felt in the usual way of feeling it."* I appeal to the experience of every practitioner, whether such a refinement as the above can be entitled to much confidence in the examination of a phenomenon like the pulse, which varies with almost every emotion or thought that crosses the mind of a dyspeptic invalid. Is it to be assented to, that, by such a criterion as this, we shall be enabled to distinguish irritation from inflammation; or functional from organic disease? The fact is, that in irritation of the stomach or bowels, the pulse is often as hard and as quick as in inflammation of those parts. The heart is so much under the influence of the stomach, in functional derangement of the latter organ, that no dependance can be placed on the state of the pulse, whether as regards hardness, frequency, or irregularity. In general, however, it will be found in dyspepsia, that the pulse is much quicker, not only while the food is digesting in the stomach, but during the whole time that chyme is passing along the intestines, than after these processes are finished. The pulse, through the day, will often be up to nearly 80, and fall, by nine or ten o'clock at night, to 60. Indeed, the dyspeptic invalid is never so well as just before bed-time, when all irritation is removed from the organs of digestion; and this often leads him to take for supper such food and drink as render him miserable all the next forenoon.

In fine, I am compelled to differ from Dr. Philip respecting tenderness at the pit of the stomach and hardness (tightness) of the pulse, as characteristic signs of a particular change in indigestion, from irritation to inflammation—from functional to incipient organic disease. These symptoms are present in the earliest, as well as in the latest stages of indigestion—nor do I believe that there is any regular order or succession of phenomena in this Proteian malady, by which the above-mentioned change can be ascertained. At the same time, I have no doubt

* In Dr. Philip's Appendix, lately published, and which is, in fact, a laboured answer to these strictures, the *hardness* of the pulse is changed to *tightness* of the same. The two terms certainly convey different meanings; but my objections apply equally to both.

that, even in the earliest periods of indigestion, there is occasionally inflammatory action mixed up with irritation, when excesses are committed, or improper stimulants have been exhibited. But on the other hand, I am satisfied, from what I have personally experienced and seen in others, that all the symptoms of what is called the *second stage* of indigestion, including tenderness at the pit of the stomach, sharpness of the pulse, and vitiated secretions, may and do very generally depend on irritation; or, in other words, on functional disorder of the stomach and bowels. I appeal to the observations of Mr. Abernethy on this point. Dr. Philip says the change in the condition of the motions marks an important change in the disorder,—namely, a transition to the *second stage* of indigestion, characterized by inflammatory action in the stomach or bowels. If the reader will consult the third case related by Mr. Abernethy, in his book, page 57, he will see how fallacious is this doctrine of Dr. Philip. A gentleman had been ill for more than a year, and his motions were “as black as his hat.” He declared he had not slept for three months. He took five grains of blue-pill, and slept that night so soundly, that he was convinced he had taken some narcotic. Before he had taken the third dose, the black motions changed to a deep orange colour—a node on his shin disappeared and he declared himself well. Now, if black or morbid motions marked an important stage in the state of the digestive organs—namely, the second stage characterized by inflammation, I ask if ten grains of blue-pill would have effected a cure? But the fact is, that in the very first, as well as in the last stages of indigestion, the motions will be often found completely unnatural, and depraved in the highest degree.

The contrary of these positions has never been proved by the scalpel; while the long lives and frequent recoveries of dyspeptics, after years of suffering, afford strong presumptive proofs that no permanent inflammation or organic disease had supervened on disordered function. This doctrine while it is less disheartening than that of Dr. Philip, is equally prudent in point of practice. It lulls into no false security—for if there be any one maxim in the healing art which is better established than others, it is that which teaches us to remove (if removable) as well as prevent, disease of structure, by correcting disorder of function. If, in examining a case of indigestion, we cannot determine whether or not inflammation or organic change has commenced (and I have shewn the difficulty, if not the impossibility of this discrimination by the marks which have been laid down by authors), what can we do better than aim at improving the functions of the organs of digestion? Nay, we may go farther; allowing that the tenderness in the epigastrium and hardness of the pulse did offer proof that inflammation or even organic

change had commenced, I should be glad to know how we are to remedy the evil, but by *withdrawing the causes of all irritation* from the organs themselves, which I shall shew is the fundamental indication in the treatment of mere functional disorder?

Febrile symptoms, as evinced by alternate heats and chills, or by evening heat and dryness of skin, some degree of thirst, dryness or redness of the tongue, defective secretions, high-coloured urine, and more than usual colour in the face, with quickness of pulse, are certainly more characteristic of inflammatory action going on in some part of the system, than tenderness of the epigastrium; and, when conjoined with this last symptom, I have no objection to proper precautions, as leeches to the epigastrium, with cool saline aperients. But whoever has attentively watched or felt the phenomena of gastric and intestinal irritation, will acknowledge that even these—nay, a very strong paroxysm of fever, may be produced by irritation alone, and where there is not a particle of inflammation present. This is every day seen in children, who will shew high fever and excitement, when irritating matters are lodged in the stomach and bowels, and who will be cured of these symptoms in a few hours by a brisk purge. This fact should be borne in mind, when the dyspeptic patient evinces febrile phenomena, and the means of removing irritation should always be employed before we have recourse to those which are calculated for the reduction of inflammation.

The younger Andral has recently published an interesting Memoir on Chronic Gastritis, in which he labours to shew, and with some success, that a peculiar disorganization of the mucous membrane of the stomach, which he terms *ramollissement*, or softening, is often found where no other symptoms had presented themselves, during life, than those which are common to the very lightest shades of indigestion. "There may have been," says he, "no vomiting,—no loss of appetite—no pain—no thirst—no disturbance of the circulation. The patient merely complains that the digestion is more or less uneasy and imperfect—and that he loses flesh and strength." The diseased condition of the mucous membrane shews itself in three grades. In the first degree, the membrane, though softened and easily reduced to a pulp between the fingers, still preserves some degree of consistence before it is scraped off by the scalpel. In the second grade, we find only a layer of pulpy or gelatinous substance, of a white, grey, or reddish colour, which might be readily mistaken for a coat of mucus spread over the cellular membrane beneath. In the third degree, this semi-fluid pulp has disappeared, and the subjacent cellular tissue is left naked, in spaces of greater or lesser extent.

M. Andral labours to prove that this softening is the legitimate product of chronic inflammation; but in this he is not quite satisfactory. He has, however, unequivocally proved that the above state of the mucous membrane takes place under the influence of irritating substances long applied to the stomach—in short, that it is intimately connected with a state of *irritation*, if not actual inflammation. It is aggravated by the imprudent exhibition of stimulants and irritants—and it is soothed, or even cured, by an opposite system. M. Andral has described other morbid appearances in the stomachs of dyspeptics, as discolourations, morbid thickenings of the coats of the organ, &c., which shew that indigestion, though seldom fatal, may, if improperly treated by tonics and stimulants, end in disorganization of the coats of the stomach.*

Speaking of the nerves of the stomach, M. Andral remarks:—“Neither can we doubt that, among the various disturbances of function which the stomach undergoes, there are many which imitate, more or less completely, acute and chronic gastritis, but which are in reality, owing to a morbid state of the gastric nerves or the centres of the ganglionic system. Hence, in some individuals, we have disordered digestion; in others, vomiting; and in others still, epigastric tenderness and pain,” &c.—In this I entirely agree with M. Andral.

SECT. VI.—SYMPATHETIC AFFECTIONS OF VARIOUS ORGANS.

We are now to notice the more prominent sympathetic affections which depend on this combination of gastric, hepatic, and intestinal disorder. It is difficult to say which is the organ or part that is most intimately linked in sympathy with the stomach and liver. I should say, however, that the brain, as the common sensory, to which all sensations are ultimately referred, is the first to sympathise with disorder of the abdominal organs. Pain in some part of the head is a very common symptom in this class of disorders; but the *functions* of the brain are affected in a great variety of ways—especially its *intellectual* functions. Confusion of thought, unsteadiness of the mind, irritability of the

* The sour wines, the made dishes, the rancid oils, and the quantities of acids which the French use every day, may account for the *ramollissement* above described, and which is comparatively rare in this country.—10th Edition.

temper, defect of the memory, fickleness of disposition, and many other phenomena which are little suspected of corporeal origin, shew themselves infinitely more often than pain, deafness, vertigo, defect of vision, or affections of mere sensation. The former gradually rise into gusts of passion, fits of despondency, brooding melancholy, permanent irascibility, and still higher grades of intellectual disturbance, till, as sometimes happens, the point of temporary alienation is reached, and suicide terminates the scene. Those functional disturbances of the brain, however, which are evinced in the form of mental phenomena, are very common in *morbid sensibility* of the gastric and intestinal nerves, where the usual symptoms of indigestion and hepatic derangement are almost entirely wanting, and these will be more distinctly alluded to hereafter. In unequivocal disorder of the digestive organs, the affections of sensation about the head most engage the patient's attention. Pains of various kinds, not seldom remittent or intermittent, are felt in different parts of the scalp, about the face, or deep in the head. When purely sympathetic of stomach disorder, they are more frequently in some particular part, than in the head generally, and assimilate in their nature to tic douloureux. Indeed, I have no doubt that this dreadful disease is, in many cases, caused by irritation of the visceral nerves—and the cures which have been performed by alterative and aperient medicines, and especially by the carbonate of iron (which removes the morbid sensibility of the nerves), confirm this opinion.

In conformity with these views, it is fairly to be presumed, that many cases of epilepsy and chorea are to be referred to morbid sensibility and irritation of the gastric and intestinal nerves—else how should purgation and lunar caustic cure these complaints? The former removes the sources of irritation, and the latter the morbid nervous sensibility. But more of this anon.

If sympathetic disorder of the brain or its membranes be long continued, it is believed, and it cannot be positively denied, that inflammation first, and change of structure afterwards, will be the result. When these processes are once set up, they become, of course, in a great measure, independent of the original cause that produces the sympathetic disorder, whether of function or sensation; and they are then not to be distinguished from primary diseases of the same parts. Nor would the discrimination, if practicable, be of any use, as respects the treatment. In what proportion of cases these sympathetic affections of the head change into inflammatory and organic disease, it is impossible to say, since few cases indeed have been so accurately watched through all their stages, as to afford any satisfactory proof—if the thing is at all susceptible of proof, which I very much doubt. As far as my own observation

extends, this conversion into organic disease is not so frequent as is imagined. Head-aches of great intensity, and even epilepsy, go on for years, and often leave no traces of their existence, when death happens from other diseases. On the other hand, we see organic changes of immense extent take place in the brain, with but little pain, or disturbance of the intellectual functions even till the last. These facts should teach us caution in pronouncing on such a difficult subject, and inspire distrust of all theories or preconceived opinions.

None of the senses are more frequently affected sympathetically than those of hearing and sight. Noise in the ears and partial deafness are very common where the function of digestion is disordered, and may often lead us to suspect the latter, when very few of the common symptoms of indigestion are present. It is not uncommon for deafness, noise in the ears, and sense of confusion in the head to disappear, for a time, after tea, coffee, dinner, or a glass or two of wine, or other stimulant, again to return when the stomach is empty. When this is the case, we may be assured that the cause is in the stomach, and that the affections of the head and organ of hearing are purely symptomatic. When these symptoms are aggravated by eating or drinking, there is then some reason to dread that a more permanent state of disorder, if not actual disease, is establishing itself in the head, and remedies should be directed to that quarter without delay. The same observations apply to affections of the organ of vision, as *muscæ volitantes*, indistinctness of sight, uneasiness in the eyes when reading, or when exposed to a glaring light. These phenomena should not be treated too lightly. They may be precursors, or rather indications of a complaint more formidable than that in the stomach from whence they originally sprung. Or they may be original affections of the head, and erroneously attributed to the stomach or digestive organs.

As sympathetic affections of the nervous system, we may fairly include those rambling or fixed pains in various parts of the body, which often pass for rheumatism, but which are frequently removed by re-establishing the functions of the stomach and liver. Even cases of partial paralysis, especially in children, are not seldom dependent most unequivocally on irritation in the digestive organs.

Of late years there has been such a tendency to periodical diseases generally, and especially to periodical pains about the head, face, neck, and other parts of the body, that we must not treat them entirely as stomach-affections. I have seen so many instances, during the last few years, of painful complaints about the head, resulting from malaria or some local cause of ill health, as damp grounds, the vicinity of ponds, dense woods, &c. that it is probable we are occasionally deceived in

such cases, by attributing them to disorders of the stomach, when the cause is some deleterious agent emanating from the earth, and floating in the air. The periodicity of the attacks, their aggravation by blood-letting and depletion generally—and their mitigation by tonics and generous diet, will help to distinguish them from complaints purely sympathetic of stomach disorder. It is difficult to say, in some cases, whether those temporary paralyses of the portio dura of the seventh pair of nerves, by which the face is so much disfigured during speaking or laughing—by which the eyelid is caused to droop—and in consequence of which the eye cannot be completely closed, are dependent on gastric irritation or malaria. The proximate cause may be some local pressure on the nerve itself, in the neighbourhood of the ear; but I suspect that there is often a loss of function in the nerve, independent of any mechanical pressure, or organic change in its structure. There is one consolation that these local paralyses almost always get well by time and attention to diet. In some cases, however, they are very tedious. In one instance, the face continued distorted for nearly two years. Some attention is necessary to closing the eye at night, lest inflammation be set up, and opacity of the cornea ensue.

Next to the brain, I would say that the heart sympathises most readily with disorder of the liver and digestive apparatus. The irregularity and violence of action in the heart, consequent on disorder of the liver and stomach, are much more common than is generally suspected, being often passed unnoticed by either patient or practitioner. The intermissions of the pulse, and the sense of tumult in the region of the heart are sometimes very alarming to the hypochondriac or dyspeptic invalid, and also to the young practitioner; but they are really of little importance.* That diseased structure of the heart does occasionally result from long-continued disturbance of its function, occasioned by bilio-gastric affection, I believe is the case; but the instances are so comparatively rare, that this very circumstance affords ground for the

* In a few instances, I have seen most of those symptoms which appertain to real angina pectoris, produced by disordered function of the stomach, and give way to a radical change of regimen and diet. But, in general, it is in the form of palpitation, and intermissions of the pulse, that the sympathetic disorder of the heart shews itself, and it is then not very distressing, unless the patient's mind be alarmed by the irregularity of the heart's action. In most cases of disordered digestion there is an irritability of the heart, which causes it to be excited into quick action by very trifling agitations of mind or exertions of body.

I would not advise the patient, however, to trifle with heart-affections, under the supposition that they are merely nervous, or sympathetic of indigestion.—10th Edit.

belief that the same may be said of other sympathetic affections. I am acquainted, at this time, with several cases where the action of the heart has been greatly disturbed for years, by dyspepsia, and yet when attention is paid to diet and the state of the bowels, the action of the organ of circulation becomes perfectly regular. Disease of the liver, however, is much more apt to seriously endanger the heart than mere dyspepsia. In proportion, therefore, as the hepatic affection predominates over the gastric, so will be the risk of sympathetic disorder of the heart changing into disease of its structure. In all dyspeptic cases, the practitioner should bear this in mind, and be guided in his prognosis accordingly. But he should also not fail to examine the heart by means of auscultation, which will afford him the most certain means of distinguishing between functional and structural disease of this organ. This is the more necessary, because it is a certain fact, that organic disease of the heart very generally produces, or at least is accompanied by, dyspepsia; and especially by the most indomitable and distressing flatulence and distention of the stomach and bowels, which attract the patient's attention far more than the dangerous disease of the heart, of which it is only a symptom. It is difficult to account for this production of dyspepsia by disease of the heart, except on the physiological principle of sympathy. The influence of the stomach on the function of the heart is a well-known phenomenon; and if all sympathies are reciprocal, which I believe they are, the re-action of the heart on the stomach may be thus explained. Several melancholy instances of dyspepsia masking fatal disease of the heart have come under my observation. In these cases, the latter disease was quite unsuspected till all hope of checking it was at an end. I cannot, therefore, too strongly recommend the practitioner to examine minutely into the functions of *all* the great vital organs when any *one* appears to labour. By this attention we may often find out which is the primary, and which the secondary affection.

Of the sympathetic affection of the lungs ending occasionally in phthisis, I shall take particular notice in the second part of this Essay. I think Dr. Paris has been thrown off his guard in treating what is called "DYSPEPTIC PHTHISIS" as a creature of the imagination. Nothing is more common than a cough from irritation of the stomach—and it is surely unsafe to aver, that long-continued disorder of function can never end in disorganization of structure. But, however this may be, it is no longer a matter of doubt that chronic inflammation and other organic disease of the liver does very frequently affect the contiguous lung, which becomes consolidated, and, if there be any tubercular disposition in the respiratory apparatus, consumption is sooner or later developed. This is more particularly the case on the return of an invalid from a hot

to a cold climate with liver-complaint. But on this subject I shall be more particular in the second part of this Essay.

Of the sympathies between the digestive apparatus and various other parts of the body, as the kidneys, bladder, urethra, rectum, organs of sense, skin, &c. it would be difficult to give a description. The urinary secretion is particularly under the influence of biliary and gastric disorder; and, I believe, nine-tenths of those who are affected with gravel and calculous complaints would get cured (unless the stone was of some size) by a particular regimen, which will be presently described. It is a natural supposition that, in faulty states of the digestive organs, improper matters are taken into the circulation, and are afterwards thrown off by the kidneys—hence the turbid, oily, sedimentous, and strong odoured urine of dyspeptic and bilious people.

The sympathies established between the cutaneous nerves and those of the digestive organs are very numerous, and tend to puzzle the practitioner exceedingly. The shoulders, the back, the limbs, the face, and especially the *back of the head and neck*, are all very subject to painful and indescribable sensations, from irritation in the first passages; and the mere nervous connexions do not afford satisfactory explanation of these phenomena, since the sympathetic association is generally strongest where the nervous communications are least numerous. Whenever these unaccountable feelings are complained of, they should lead us to suspect irritation of the stomach or liver—and this irritation will often be found to exist, and to be the cause of the phenomena, when there are very few of the common symptoms of indigestion or of derangement of the biliary secretion present.

The sympathy between the nerves of the digestive organs and the general nervous system, has been always recognized and acknowledged—and by none more accurately than by Dr. Whytt, nearly one hundred years ago.

“A delicate state,” says this acute observer, “of the first passages, or an *unnatural sensibility of their nerves*, not only disposes people to many complaints in those parts, but the *whole nervous system* is thereby rendered more moveable, and liable to be affected by the slightest causes.” “When my stomach and bowels have been out of order, and affected with any uneasy sensation from wind, I have not only been sensible of a general debility and flatness of spirits, but the unexpected opening of a door, or any such trifling unforeseen accident, has instantly occasioned an odd sensation about my heart, extending itself from thence to my head and arms, and, in a lesser degree, to the inferior parts of my body. At other times, when my stomach is in a firmer state, I have no such feelings, or at least in a very small degree, from causes that might be

thought more apt to produce them. From what has been said we may see that faintings, tremors, palpitations of the heart, convulsive motions, and great fearfulness, may be often owing more to the infirm state of the first passages, than to any fault either in the brain or heart. The powers which the alimentary canal, *when its nerves are disagreeably affected*, must have in producing disorders in the most distant parts of the body, cannot be doubted by those who attend to that wonderful and widely extended sympathy which obtains between it and almost the whole system."

—WHYTT.

The experience of one hundred years has not contradicted one iota of the above observations, though the varying doctrines of the day have often caused them to be lost sight of for a time.

When the general nervous system has once participated in the morbid sensibility of the gastric and intestinal nerves, there is no end to the variety of phenomena produced in different individuals, by the slightest causes. Changes of weather, errors in diet, mental emotions, or any the most trifling impression, will then give rise to a train of morbid feelings and symptoms which it would be impossible to describe or name. People in health cannot conceive that these feelings can be real, and therefore little sympathy is shewn towards the unhappy victim of morbid sensibility, whose ailments are nevertheless as really *physical* as those labouring under fever or any other disease, though fortunately they are not so dangerous.

ON
MORBID SENSIBILITY
OF THE
STOMACH AND BOWELS,

WITHOUT ANY OBVIOUS OR WELL MARKED SYMPTOM OF DISORDER IN
THOSE ORGANS THEMSELVES.



I HAVE, in several parts of this Essay, observed, that the sensibility of the internal surfaces of the stomach and bowels, or, in other words, of the ganglionic nerves, is not the common sensibility of the skin, since they are insensible to the touch or to the application of common substances; although they are endowed with a most acute sensibility of their own, which is termed their organic sensibility. This peculiar sensibility may be excited to such a degree as to occasion convulsions, tetanus, and even death, without our being conscious of any sensation in those parts themselves. Thus a small worm, an ascaris, will so offend the organic sensibility of the intestinal nerves as to cause epileptic fits, or general convulsions. A hundred medicinal substances will affect the whole frame, in a hundred different ways, when applied to these surfaces, and all without any consciousness, on our part, of irritation there. In short, in very many instances, we can only become acquainted with the operation of medicines, articles of diet, or other agents, on these surfaces, by observing their effects elsewhere—not by the sensations they produce in the parts themselves. Tartar-emetic is a familiar instance. The heart, the brain, the nerves, the muscles, the glands, the mind itself—will all be powerfully affected by the application of a few grains of this medicine to the stomach, while not the slightest sensation is felt in the organ to which it is first applied. If, indeed, we apply to this organ substances of so acrid or pungent a nature as to produce pain or other unpleasant sensation there, we change the organic into common sensibility, or we exalt the low degree of the latter, and thus offer dangerous violence to the parts; but all impressions below this range are made without our knowledge. And it is very curious, as before observed, that when this conscious pain or other sensation is excited in the stomach or bowels, there is less effect, in general, produced on the other parts of the machine. Can we wonder, after this, that the great majority of those effects which we feel in dif-

ferent parts of the body, from sympathy with the stomach and bowels, are unattended with any *sensible* operation or excitation in those organs themselves? This opens out an immense field for observation—and it is only by sedulous observation that we can cultivate that field with advantage. We know that the stomach and bowels are influenced by a great variety of agents, physical and moral;—and we know, by experience, that their effects on these organs themselves are of comparatively trifling consequence, when compared with the effects reflected back from these organs on every other organ and function of body and mind.

We are now prepared to take a concise view of the causes which induce that MORBID SENSIBILITY of the stomach and bowels, from which spring so many disturbances of function in other parts of the living machine. These causes may be divided into two classes—physical and moral. Numerous and powerful as are those of the physical class, the moral causes are still more predominant and influential.

SECT. VII.—PHYSICAL CAUSES.

EVERY substance, medicinal or dietetic, which is applied to the stomach, induces a physiological action in the nerves, blood-vessels, and fibrous structure of that organ, which we call *excitement*—and the aptitude or capacity of the stomach for the production of this action, we call its *excitability*. If the substance applied be of healthy quality and in proper quantity, it produces *insensible or salutary excitement*: that is, an action of which we are unconscious. The substance may then be termed merely an *excitant*, as a moderate quantity of plain food and drink. But, let the substances introduced into the stomach be of improper quality, or in improper quantity (as ardent spirits or acrid medicines), and the action produced thereby will be raised from *insensible* to *sensible* excitement—that is, we will be conscious of something going on in the stomach. Here the agent introduced no longer deserves the name of healthy *excitant*, but becomes, in fact, an *irritant*—and the action induced is *irritation*, rather than excitement. If these irritants continue to be applied, and this irritation to be induced, the aptitude of the stomach, which we have termed its *excitability*, is changed into *irritability*, or MORBID SENSIBILITY, as shewn by pain and disordered function in the organ itself (indigestion, &c.), or what is much more frequently the case, by a variety of sympathetic disorders and morbid

sensations in different parts of the body, as well as in the mind, or rather its organ, the brain.*

It is not very material whether the *sensible excitement* induced in the stomach by food or drink be of a pleasurable or painful kind. The final result will be the same—irritability, or morbid sensibility. If the excitement be pleasurable, as from wine, we are *spoiling* the stomach, as we *spoil* a child, by indulgence; we are *educating* the organ improperly, and laying the foundation for morbid irritability.† On the other hand, if what we take into the stomach induce disagreeable sensations there, we are then offering a violence to the organ which will very soon terminate in disease; or, more properly speaking, the natural excitability of the stomach is already changed into morbid sensibility, and disorder has actually commenced. But let us take a closer view of the physical agents or causes now under investigation.

These are very numerous, the surface of application being that of the whole body, external and internal. The stomach may be considered, hardly excepting the brain, as one of the greatest centres of sympathy. Every impression on the skin, whether of cold or of heat, of humidity or of drought, influences, more or less, the functions of the stomach. This must have been experienced by every individual. In a climate like ours, therefore, where atmospheric changes are so perpetually occurring, not only as to temperature, but as to humidity, density, rarity, &c. we cannot wonder that the functions of the alimentary canal should be so frequently disturbed.

On those who live in the pure and open air of the country, these atmospheric changes have comparatively little effect; but in cities and large towns, where the whole constitution is effeminated—where the external surface of the body is not habituated to the vicissitudes of the skies—where moral causes are constantly operating injuriously on the digestive organs—and where air, imbued with millions of miasmata, exhaled from every thing in the animal, vegetable, and mineral kingdoms, is breathed, swallowed, and kept in contact with the skin, the effects are conspicuous in the sallow complexions, puny or capricious appetites, and imperfect digestion of the inhabitants.

This state of the appetite and digestion, resulting from sedentary

* It is impossible, in discussing these subjects, to avoid occasional tautology; but I had much rather be guilty of repetitions than fail in impressing on the mind of the young practitioner clear ideas respecting these very important but abstruse points of pathology.

† On this point I differ from Mr. Abernethy, who seems to think that pleasurable excitement in the stomach is salutary.—See the section on Mr. A.'s system farther on.

habits, impure air, late hours, and mental perturbations, leads to an aggravation of the evil, by the recourse which is had to high-seasoned dishes and stimulating drink, indulged in, more or less, by all classes of society. The nerves of the stomach are daily irritated by what is ingested—while the nerves of the bowels are irritated by what is undigested. To these may be added the vitiated secretions themselves, not only of the stomach, but of the liver, pancreas, and all the innumerable glands that stud the surface of the alimentary canal. These causes produce all the phenomena of indigestion detailed in the preceding section, not only as regards the disorder in the organs of digestion themselves, but as respects the innumerable affections of distant parts, from sympathy with the stomach and other internal viscera.

The qualities and quantities of food and drink, which produce or keep up irritation and morbid sensibility in the digestive organs, are but little suspected of mischief, because they are in general use, and because many individuals are daily seen to take far greater liberties with the luxuries of the table, without any very apparent bad effects resulting. The evil day, however, arrives at last, and it is found that the same food and drink which had been so long taken with impunity, now begin to be followed by uncomfortable sensations, and, at length, with actual disorder in the digestive apparatus. Still this is considered as an accidental occurrence, not connected with previous habits of diet, but owing to other and unknown causes. This last is very often true, in part. The previous habits may only have produced a predisposition to indigestion; and, then, when any other cause is applied, especially of a moral nature, the explosion takes place. The fact appears to be, that, in civilized life, the host of moral and physical causes of disease, that are always in operation, keep the powers of the digestive organs below the standard of health; while the quantity and quality of our usual food and drink are calculated to impair these same organs, even if they were in a state of the most perfect integrity of function. If this position be true, and I believe it to be so, it is easy to see the reason why so many labour under indigestion, even in its obvious or open forms. Among the leading *physical* causes of indigestion, then, I place our daily food and drink. I have shewn that neither the one nor the other *ought*, in health, to produce any sensation in the stomach, if taken in the proper quantity, and of the proper quality. But, whenever our drink induces much sensible excitement in the system, or our food is followed by much inaptitude for mental or corporeal exertion, we have transgressed the rules of temperance, in some degree, and are laying the foundation for disorder. When food produces any sensation of *discomfort* in the stomach, as sense of distention, &c. attended or not with some degree of depression

of spirits or irritability of temper, indigestion (or rather morbid sensibility) has actually commenced, however slightly,—and the height to which it may be carried, if the irritation of too much food or too much drink be continued, I need not now describe.

As, of all the *physical* causes of indigestion, our diet is the chief—so over this cause we fortunately have the greatest control. But sensuality and conviviality are perpetually seducing us from the paths of temperance, and seldom permit us to think of preserving health till we have lost it. It is needless to describe the qualities and the quantities of food and drink that are injurious. I have endeavoured to lay down the rule by which each individual is to judge of this matter :—*any discomfort of body, any irritability or despondency of mind, succeeding food and drink, at the distance of an hour, or even a day, may be regarded (other evident causes being absent) as presumptive proof that the quantity has been too much, or the quality injurious.*

It is, however, far more frequently by the *quantity* of our food that the stomach is irritated and its nerves rendered morbidly sensible, than by the *quality*. In respect to this last, the vegetable world (however lauded by hermits and philosophers) is infinitely more prolific of irritation than the animal kingdom. Farinaceous food, however (as gruel, sago, arrow-root, for example), is an exception. Perhaps, of all species of food, this is the least irritating, and where a high degree of morbid sensibility prevails, it is often the only thing that can be borne.* Tender animal food is next, in point of unirritating qualities, with the advantage of being more nutritious and less bulky. We see whole nations, as the Hindoos, Irish, and Scotch, live and thrive on food almost exclusively farinaceous; while others, as in some parts of South America, live well upon animal food, and that almost alone.

In respect to drink, water is the only fluid which does not possess irritating, or, at least, stimulating qualities—and in proportion as we rise on the scale of potation, from table-beer to ardent spirits, in the same ratio, we *educate* the stomach and bowels for that state of unnatural sensibility, which, in civilized life, will sooner or later supervene. Moderation in wine or dilute spirit and water would, however, seldom be

* I have been greatly misunderstood, as recommending people, even when but a little out of health, to live upon water gruel, and drink nothing but water. But it should be recollected, that this regimen is only prescribed for the highest grade of irritability and debility of the digestive organs, and not for people in health, or who can digest more substantial aliments without difficulty. There are, indeed, a considerable number who cannot so well digest these farinaceous slops as a small quantity of animal food. These people should always be guided by their own feelings in the selection of food.

productive of mischief, if they were not accompanied by other causes, moral or physical. There is infinitely more mischief done by too much food than by too much drink.*

The *physical* causes, then, of morbid sensibility of the nerves of the digestive organs are—atmospheric impressions on the external surface of the body—cutaneous disorders and their sudden retropulsion—disordered functions and diseased structure in other parts of the body, as in the brain, liver, &c. acting through the medium of sympathy on the organs of digestion—food and drink in too large a *quantity*, or of too stimulating or indigestible a *quality*—acid substances, as drastic purgatives, &c. taken into the stomach, or generated in the alimentary apparatus—sedentary habits. Under these heads all, or almost all, the *physical* causes may be ranged. They are very numerous, and act through two principal channels—sympathy and direct application.

If it be asked how food, which is the natural stimulus of the nerves of the stomach and bowels, should render them morbidly sensible? I might answer, by asking another question—how does light, which is the natural stimulus of the optic nerve, render it morbidly sensible, if too brilliant and too long applied? The parallel, I think, is perfectly just.

The same reasoning is applicable to drink. If, for water, we substitute ale, wine, or spirits, in too great quantities, we stimulate the nerves of the stomach; though some stomachs will bear this stimulation for many years in succession, with little apparent injury. But not so in civilized, and especially in *civic* life. By this stimulus the nerves are excited, and, in due time, irritated, so as to set up an habitual state of *morbid sensibility*. The doctrine of Brown, indeed, teaches us that this constant stimulation will ultimately wear out the excitability of the nerves, and render them *less sensible* than at first to the same stimuli. It may be so; but I much doubt whether, in the last sad years of the confirmed drunkard, the *morbid sensibility* of the stomach and bowels is not still his unhappy lot. His appetite and powers of digestion are nearly extinguished, I grant; but the stomach becomes *more* irritable, in proportion as intemperance has been long-continued; till, at length, the presence of food cannot be borne without pain or sickness, and a very small quantity of that burning potation which he used to swallow so freely, now makes him quickly inebriated. These are facts which we see every day, and they strongly support the position I have laid down.

* People who are much in the open air—who take active exercise—whose minds and bodies are well employed, may take with impunity both food and drink which the effeminate and sedentary would severely suffer from. This will be more clearly shewn in the section on Travelling Exercise farther on.

SECT. VIII.---MORAL CAUSES.

THERE is but one path along which these causes can travel from the organ of thought to the organs of digestion ; but the number of airy agents, and the velocity with which they glide along the silvery pneumogastric conductors, baffle all calculation ! The intellectual operations of man, in a state of high civilization, as compared with man in a state of nature, are as much more numerous as the mechanical arts of Europe out-number the simple contrivances of Otaheite. In such proportion, also, his susceptibility to moral impressions, is augmented to an inconceivable extent ; and these impressions, though first received by the sensorium, are all reflected on the organs of digestion with more or less force, according to the state of predisposition in these organs. In this country, where man's relations with the world around him are multiplied beyond all example in any other country, in consequence of the intensity of interest attached to politics, religion, commerce, literature, and the arts—where the temporal concerns of an immense proportion of the population are in a state of perpetual vacillation ; where spiritual affairs excite great anxiety in the minds of many ; and, where speculative risks are daily run by all classes, from the disposers of empires in Leadenhall Street, down to the potatoe-merchant of Covent Garden, it is really astonishing to observe the deleterious influence of these mental perturbations on the functions of the digestive organs and nervous system generally. The operation of *physical* causes, numerous as these are, dwindles into complete insignificance, when compared with that of anxiety or tribulation of mind. These causes very often escape the investigation of the physician, unless he is very much on his guard. The patient is prodigal of description, as far as regards his corporeal feelings—and he is often very candid as to the *physical* causes which may be enquired after by the practitioner ; but he seldom reveals (for obvious reasons) the real origin of the evil, when it is of a moral nature, unless it be accidentally drawn from him by cross-questioning. The disorder of the digestive apparatus, however, induced through mental emotions, is very generally of a different cast from that resulting from physical causes, such as intemperance, &c. but the slightest physical causes, in addition, exasperate the complaint exceedingly.

It is hardly worth while to attempt any physiological explanation of the mode in which the mental discomfort produces the corporeal disorder. The fact has not escaped the notice of even the most heedless observers, and is pointedly alluded to by poets, as well as physicians. A single look, and a very few words from the tyrant monarch, gave the ambitious Wolsey a fit of indigestion which terminated the Cardinal's life !

The function of digestion, as, indeed, every function, is so completely under the nervous influence, that there can be no doubt of the channel through which the mischief is produced. Mental anxiety not only arrests or disturbs the digestive process in the stomach, by interrupting or weakening the nervous influence on which it depends, and thereby leaving the materials of food open to the chemical laws that would act on them out of the body; but, in a remarkable manner, vitiates or impairs the biliary secretion, thereby adding a new and powerful source of irritation to the delicate nerves of the duodenum and small intestines. The consequence is, that the whole line of the alimentary canal, from the cardiac orifice to the valve of the colon, is kept in a state of *irritation* from the time the food is taken in till its remains pass into the great intestines. This is distinctly felt by the individual, who has no ease, either in mind or body, till the process of digestion, such as it is, and of chylication is over, when he feels comparative comfort. The mind and body then seem relieved from a burthen, and a most significant remark is often made by people in this condition, that, "*if they could live without food they would be well.*" Whenever this observation is made, we may rest assured that there is a morbid sensibility established in the nerves of the alimentary canal—and it is two to one that this has been induced by mental anxiety, or, in other words, by moral causes. But, in a great proportion of cases, the *effects* of this morbid sensibility of the stomach and bowels are not distinctly cognizable to the individuals by pain or uneasiness in the parts themselves, nor by any very morbid state of the evacuations; but in the re-action of the gastric and intestinal irritation on the brain, as evinced through the mental faculties. They notice, therefore, the exasperation of these mental miseries, at certain times, but do not suspect the food and drink as the cause of these exasperations. Hence arises a whole class of maladies, which being unattended by any evident disorder of the body, are attributed to the imagination, and the unhappy individual is put down by his friends, and too often by his physician, as a decided HYPOCHONDRIAC.

SECT. IX.--NERVOUS IRRITABILITY; MENTAL DESPONDENCY.

OF the intimate nature of *mind* I profess to know nothing. The study of that department belongs to the metaphysician, who, as his name imports, goes *beyond* the physician. It is very evident that man is a

compound being—moral and physical, or mental and corporeal. And as mind can only be manifested, in this world, through the instrumentality of matter, so its faculties or dispositions are pretty regularly influenced by the state or condition of our corporeal organs. Some of our mental faculties, however, are much more under the influence of physical disorder than others; but I much doubt whether any, even the very highest attributes of the mind, can stand completely independent of, and unaffected by, derangement of function or structure in some parts of the corporeal fabric. A very slight inflammation of the membranes of the brain, will destroy, or pervert, for a time, the judgment, the memory, the feelings, the affections, of the greatest philosopher or divine. How, then, can we wonder that various derangements of the body, and especially of those organs with which the brain is closely linked in sympathy, should disturb the subordinate attributes of mind, and especially the TEMPER of an individual.* The temper is liable to be assailed at once by two different classes of irritation—moral and physical; and the aids of religion and philosophy are much less available, and much less effectual, in the latter, or physical class of ailments, than in the former. It is curious, that one of our ablest poets has embodied, in a well-known couplet, these two classes of irritation, by which the TEMPER of man is so greatly modified :

“ See the same man in *vigour*, in the *gout*,
Alone, in company—in *place*, and *out*.”

* When I say that the manifestations of the faculties of the mind are dependent on, and influenced by, the state of our corporeal organs, I offer no support to the doctrines of the Materialists. The muscles are the organs of motion, but they are not the faculty which *causes* the motion. The eye is the material organ of sight, but it is not the faculty of vision. *Sight* is not seated in the coats or humours of the eye—in the retina—the optic nerve—nor, in fact, in any portion of the brain. All these parts are constructed so as to convey the images of things to the *mind*—but none of these parts can see—not even the ultimate particle of brain in which the optic nerve terminates. They are all *instruments* of vision, and the faculty or sense itself is beyond the boundaries of matter. The same may be said of hearing, and of every other sense. Dr. Haslam, and some other of our modern philosophers, have uttered great absurdities, when they said that the “brain may think.” The brain can no more think, than the globe of the eye, the optic nerve, or the thalamus nervi optici can see. The brain is merely that portion of matter which is in most proximate communication with the mind or immaterial principle. It is, therefore, only an *instrument* through which the mind receives impressions from without, and transmits its dictates from within. But in all intellectual operations, the material organ is as necessary to the mind, as the mind is to the material organ. When the instrument is disordered, the manifestation of the mind is deranged. From this explanation it will be remembered that, when I speak of disorders of the *mind*, I merely mean the material organ of the mind.

The physical cause is shewn in the first line—the moral cause in the second.

But it is not by *painful* diseases that the temper is most strongly influenced. Many an individual who would bear, with fortitude and comparative equanimity, a fit of the gout, or the pain of a surgical operation, will be completely changed in his temper, and become waspish, irascible, and captious, by an irritation in the stomach (transmitted sympathetically to the brain) of which he is perfectly unconscious. It is said, and I believe with justice, that an infant never cries without feeling some pain. The same observation may be extended to maturer years; and it might be safely asserted that the temper is never unusually irritable without some moral or physical cause—and much more frequently a physical cause than is suspected. A man's temper may undoubtedly be soured by a train of moral circumstances, but I believe that it is much more frequently rendered irritable by the *effects* of those moral causes on his corporeal organs and functions. The moral cause makes its first impression on the brain, the organ of the mind. The organs of digestion are then disturbed sympathetically, and re-act on the brain. And thus the reciprocal action and re-action of the two systems of organs on each other, produce a host of effects, moral as well as physical, by which the temper is changed and the health impaired.

But, in connecting irritability of temper with a physical disorder, I by no means wish to furnish the person thus afflicted, with an excuse for giving way to every impulse of irritation. On the contrary, the moral or rational curb which he should now endeavour to keep on his temper, ought to be more forcibly strained than ever. As the *original* cause of the irritability is generally of a moral nature, so the means of cure must partake of a moral kind. Irritability, like every other disposition, will be certainly increased by indulgence. It is, therefore, of the utmost importance, not only to avoid every source of moral irritation, but to check the first movements of irritability, as one of the chief remedies for the disorder. The physical means of lessening this irritability of temper will be pointed out hereafter, while treating of the irritability of the stomach, by which it is so much increased, even when it is not originally produced thereby.

MENTAL DESPONDENCY is so nearly allied to HYPOCHONDRIASIS as to be, in fact a lower grade of this last distressing disorder. At a first glance, irritability and despondency would seem to have little analogy to each other: yet they are not only of a kindred nature, but the latter (mental despondency) appears to be the connecting link between mere irritability of temper, and that high and distressing degree of nervous

affection, MELANCHOLY. I have never yet seen a single instance of mental despondency where, on accurate investigation, it could not be traced to some connexion with bodily disorder—and, in nine cases out of ten, to deranged function of the digestive organs—or to morbid sensibility of the stomach and bowels. It is quite in vain to attempt to rally people into good spirits by mere argument, when the cause is of a physical nature, which it generally is. The mental despondency resulting from a moral cause, as a domestic affliction, a pecuniary loss, disappointed ambition, or crosses in love, is of a different character from that which is the consequence of corporeal disorder. It very generally, however, induces this corporeal disorder, and then the malady is necessarily increased, and its symptoms complicated, partaking of a moral and physical nature. It is in such circumstances that judicious medical advice may be of considerable importance.

SECT. X.--HYPOCHONDRIASIS.

THIS curse of civilization is not confined to any age or any nation. Wherever the mind has been cultivated at the expense of the body, there hypochondriacism has prevailed. Aristotle informs us that all the great men of his time were hypochondriacs, or at least melancholics; and the disease, in its more marked forms, has been described by physicians and even by poets, from Hippocrates down to the present time.

In respect to the nature of this disease, I am convinced that juster notions were entertained of it some hundreds of years back than at the present moment, with all our advantages of pathological investigation. Cullen defines it to be "*indigestion*, with languor, sadness, and fear, from inadequate causes." Now, I do maintain that, although hypochondriacal symptoms often attend indigestion, as indeed I have abundantly shewn, yet, indigestion is by no means essential to hypochondriasis. In several patients whom I have attended, and who exhibited good specimens of hypochondriacism, the appetite was good, the evacuations perfectly natural, and no pain, flatulence, or other symptom of indigestion in the stomach was complained of. In most of these instances, however, the hypochondriasis could, at any time, be exasperated or mitigated by free or by abstemious living—shewing that the nerves of the stomach and bowels are concerned in the mental phenomena. The Cullenian doctrine, I believe, is the prevailing one in this country; while two different theories of the disease obtain on the

Continent—especially in France. The disciples of Broussais consider hypochondriasis as depending mainly on a state of chronic inflammation of the stomach and bowels, while an able author, M. Falret, has laboured to prove that the seat of the disease is in the brain. The doctrine of Broussais is, indeed, pretty nearly the same as that of Dr. Philip—but it is surely untenable, seeing the lengthened age which hypochondriacs attain, and the frequent absence of all symptoms or proofs of this chronic inflammation. In respect to M. Falret's doctrine, I think it is evident that the affection of the brain is more often secondary than primary—though it is very reasonable to suppose that, in process of time, the brain does actually become affected, in the same way as we see long-continued disturbance of function in any other organ, end ultimately in change of structure. But these are consequences, not causes of the original malady. Thus we see hypochondriasis occasionally terminate in monomania, or aberration of judgment on a single point—and then it is possible that actual lesion of the brain or its membranes has taken place, though this is by no means always the case. None of the modern doctrines, however, are new. Hippocrates, Galen, and Areteus, attributed hypochondriasis to black bile (the hepatic doctrine of our own time)—Diocles placed the seat of the disease in the stomach—others in the liver, mesentery, and spleen. Willis considered it an affection of the brain and nervous system (the doctrine of Falret)—while Sydenham made it depend on debility, and on irregularity of the animal spirits. Boerhaave believed in the existence of a tenacious matter, obstructing the vessels of the hypochondria. Lower accused the state of the blood—and Hoffman believed that the disease often depended on *chronic inflammation of the mucous membrane of the intestines*—the present doctrine of Broussais.

The following opinion of Villermay (taken from Whytt) precisely accords with my own observations and experience. “Ce n'est pas dans l'alteration du tissu nerveux lui-même, que reside la cause immediate de cette nevrose : c'est dans une affection *des propriétés vitales des nerfs de la nutrition* ; aussi l'un reconnaît généralement pour siège primitif de l'hypochondre, les viscères abdominaux, spécialement l'estomac *affecté dans leur sensibilité organique*.” This appears to me the true state of the case.

I have already observed, that mental anxiety, too much exercise of the intellect, and too little exercise of the body, were the chief causes in this, and, indeed, in all other countries, of the various phenomena of hypochondriasis ; and that a *morbid sensibility* of the nerves of the stomach and bowels, with or without the usual symptoms of disordered digestion, was the leading feature of the disease, and the principal cause

of the varied and endless train of symptoms which develop themselves in the mind and in distant parts of the body.

Hypochondriasis is generally represented as commencing with some unequivocal affection of the stomach, as sense of uneasiness and distention after eating; slow and difficult digestion; eructations of air, acid, or portions of the food; flatulence in the bowels some hours after eating; fur on the tongue, especially in the morning, with a pasty, disagreeable taste in the mouth; occasional nausea, or even sickness of stomach; appetite either defective, irregular, or voracious; disagreeable odour on the breath; irregularity, but generally constipation of the bowels, &c.—in short, the usual symptoms of indigestion. This may be the case, especially when arising from physical causes, as intemperance and the like; for at this early period, the extensive morbid sympathies are not established—the mental phenomena are not developed—and the individual, in short, is not hypochondriacal. But let this state of the digestive organs continue for a certain period, and become aggravated—or let the causes be of a moral rather than a physical nature, as losses in business, crosses in love, disappointed ambition, or a thousand other mental afflictions—and then we shall find that the original train of corporeal disorders in the digestive organs is masked, or almost entirely disappears, under the complicated sympathetic affections of remote parts. These sympathetic affections are of a mixed character, corporeal and mental. In proportion as the *causes* are of a physical nature, so will be the predominance of the sympathies:—And, on the other hand, in proportion as they are of a moral nature, so will the sympathetic disorders be of a predominant intellectual character. In general, however, they are mixed. There may be palpitation and irregular action of the heart—cough, or other affection of the lungs—pain, heat, confusion, giddiness, noise, or twenty other sensations about the head—uneasiness or pain in the region of the kidneys, the bladder, the rectum, or other parts of the body. In short, there is not an organ or spot of the whole human fabric which is not liable to become the seat of some morbid feeling, more tormenting than the most dangerous organic disease;—so true is the expression of Mangetus:—“*Signorum maximus est numerus, vix enim ulla pars corporis est quæ vim hujus morbi effugit, præcipue si morbus radices altè egerit.*” At the same time, we need not expect all, or even a majority of these symptoms in any one individual.*

* The sense of taste is sometimes remarkably vitiated in morbid sensibility of the stomach and bowels. Thus, I have known a gentleman who was annoyed with an alternate taste of copper in his mouth, and a flavour of putrid fish. When his stomach was empty, he had the coppery taste—and when it contained food, he had the

In the more advanced, or rather in the higher grades of hypochondriasis, especially if the morbid sensibility of the nerves of the digestive apparatus has been induced by moral affections of a trying nature, then the intellectual functions—the sensations, the perceptions, the meditations, are singularly disordered. The nerves of sense, under these conditions, are morbidly susceptible to an astonishing degree. Thus, any sudden noise will make an impression as vivid as if the organ of hearing was distributed over the whole surface of the body. It is said of the hypochondriac, that he *exaggerates* every feeling:—But the truth is, that every sensation is *exaggerated*, not by his voluntary act, but by the morbid sensibility of his nerves, which he cannot by any exertion of the mind prevent. Hence his imagination is perpetually placing these morbid feelings in different parts of the body to the account of some serious organic disease. The nerves of the hypochondriac are so painfully susceptible of every impression, and the mind is so harassed by these distressing appeals from the senses, that the individual endeavours to avoid society, from the fear of collisions—or if the ties of friendship or other motive draw him into conversation, he is perpetually describing his complaints, or dwelling on their fatal tendency. Finding but little relief from medicine, and, indeed, seldom giving any medicine a fair trial, while the *consolation* of friends generally increases his miseries, as consisting of raillery, or improper attempts to persuade him that his complaints are imaginary, he flies from one medical man to another, and not unfrequently becomes the dupe or the victim of quacks, who humour his ideas—confirm him in the belief of the reality of the danger which he apprehends—or delude him by unequivocal assurances of cure. It is no wonder that, tired out with disappointed expectations, and tortured with wretched feelings, his life should become burthensome to him, and that he should look upon death as the only deliverer from complicated and incurable ills. It is not one of the least curious anomalies in this strange malady, that the individual who appears so solicitous about every symptom of his complaint—and consequently about life, should not very rarely be the one to commit suicide. The fact is, that hypochondriacism, in its highest degree, passes into monomania, or mental

putrid fishy flavour. These perversions of the gastric and gustatory nerves rendered his life completely wretched. The first edition of this Essay fell into his hands. He adopted a most rigid system of diet, and derived infinite benefit from the measure. He then came and informed me of the result. Since the 4th edition of this work was published, several cases have presented themselves, where these disagreeable tastes in the mouth have produced the most distressing effects, and yet where no other ostensible symptom of stomach disorder could be detected.—10th Edition.

delusion on a single subject—and it is *despair of relief* that drives the sufferer to fly into the arms of death to escape the miseries of existence.* I shall, however, pass over those aggravated cases of hypochondriasis, approximating to aberration of intellect, in which, for instance, the patient fancies the existence of something quite impossible, in order to make a few observations on far lower, but far more frequent grades of the disorder, characterized by mental despondency, fits of passion, irritability of temper, gloomy anticipations, melancholy moods, alternate sallies of good and bad spirits, &c. which meet the eye every hour of the physician's life. In civilized society, indeed, what with ennui and dissipation in the higher ranks—anxiety of mind, arising from business, in the middle classes—and poverty, bad food, bad air, bad drink, and unhealthy occupations among the lower classes, there is scarcely an individual in this land of liberty and prosperity—in this kingdom of “ships, colonies, and commerce,” who does not experience more or less of the “English malady”—that is to say, a preternaturally irritable state of the nervous system, connected with, or dependent on, MORBID SENSIBILITY of the stomach and bowels.†

* Since the 8th edition of this work was printed, one of the most remarkable cases of hypochondriacal monomania on record, has become public property by its notoriety—I allude to the melancholy case of the late Robert M'Kerrell, Esq. who terminated his life by swallowing two ounces of prussic acid, at his apartments in Regent-street, in October, 1835. This gentleman amassed a considerable fortune in India, and on his return to his native country, stood a contested election at Paisley, and lost it. From that time, he became affected with a periodical illusion respecting a particular *number*, which, every second day, seemed connected with his fate, both in this world and the next. Every time that this fatal number, or any of its combinations, presented itself to his eye, he suffered the torments of the damned—and that only on the bad day! He communicated the secret to myself, and to myself alone, two years and more before his death. I did all in my power to combat the illusion, but in vain. Tired out with his sufferings, he committed suicide in the most cool and determined manner, after writing a letter respecting his funeral, which lay open on the table beside the bottle that contained the poison. My evidence alone preserved a large fortune from being forfeited to the Crown, as I proved, from my visiting-book, that he committed the horrid act on the day of the illusion, and consequently when he was labouring under MONOMANIA. On examination after death, we found some most remarkable organic diseases, which, no doubt, were connected with the mental hallucination. Thus, we discovered a stony concretion, with sharp spikes, growing into the PAR VAGUM, or great pneumo-gastric nerve, and which must have proved a source of intense irritation; but, being a nerve distributed to organs not endowed with common sensibility, no pain was felt in these parts by the patient. The stomach, the heart, and the lungs, the organs to which this nerve went, were all in a state of disease. The whole case is published, and the details are of the highest importance, not only in a medical, but in a medico-legal point of view.—10th Edit.

† There are but few who have led an early active life, whether in the army, the

As it is more easy to remove disorders in the beginning than when they have taken deep root, so it is very important both to the patient and practitioner, to detect the lighter shades of what may go on in the end to confirmed hypochondriacism, than which there is not a more terrible or more intractable malady incident to man. It is fortunate for the patient when unequivocal disorder of the stomach and digestive organs is an early feature of the disease, for then his attention is directed to the root of the evil. It is, also, a sign that *physical* causes are operating deleteriously, and these can generally be more effectually combated than moral causes. But when the disorder in the digestive organs is not very prominent, or is wholly inapparent, and the malady shews its first approaches only through the medium of the mind, or through distant sympathies in the body, the real state of the case is seldom ascertained till serious mischief is done.

Whenever, therefore, a man finds any alteration in his temper or moral feelings, there being no adequate moral cause, he should suspect some *physical* cause. Let him then narrowly watch the state of these deviations from natural temper or feelings, after free living and after abstinence—after complicated dishes, and after plain food—after wine and after water. If he does not find an increase or diminution of his mental or corporeal ailments, according as he leans to the one side or to the other of these points of regimen, then the complaint is not that which I am now describing. But I am confident that he will very generally recognize the correspondence between cause and effect—and if so, how can we have a better test for the nature of the complaint, or a firmer basis for the treatment? Even if the original causes be purely of a moral nature—as, for instance, severe losses in business, or specu-

navy, the colonies, or in commercial pursuits at home, who are capable of enjoying the anticipated pleasures of retirement afterwards. We, therefore, find a great proportion of these in a state of hypochondriacism, more or less prominent. Exercise, whether of body or mind, is the great antidote, when in moderation, to this state—but few will take regular exercise, mental or corporeal, without some distinct pursuit, which those who are retired have not. Besides, as it is only the wealthy who voluntarily retire, they think one great object of their remaining days is to live well; and this very indulgence leads to more misery than they ever experienced in the pursuit after riches. Thus the *physique* poisons their *morale*. Those, on the other hand, who are forced to retire from military service, in consequence of their services being no longer wanted, become discontented as well as idle—and a state of hypochondriacism very generally succeeds. Of these we see daily instances, since the conclusion of the long and disastrous war with France.

This subject is fully discussed in a small work by the author, and entitled “*THE ECONOMY OF HEALTH; or the Stream of Human Life, from the Cradle to the Grave.*” *Third Edition.*

lations, &c.—still the mental despondency is aggravated by the morbid sensibility of the nervous system, thus induced,—and this morbid sensibility is again mitigated or exasperated by the quality and quantity of our food and drink. The physician cannot cure the moral cause that preys upon the mind, and through that medium injures the body; but he can, in some measure, prevent the re-action of the body on the mind, by which re-action the moral affliction is rendered infinitely more difficult to bear. Thus a man loses by speculation a certain sum of money, which makes a considerable impression on his mind, and depresses his spirits. After a while he finds that TIME, instead of healing the wound which misfortune had inflicted, has increased it—and that what he could look upon with some degree of fortitude in the beginning, is now become such a source of despondency that it haunts him by day and by night, and is for ever uppermost in his thoughts, and even in his dreams, if he can sleep. He finds, moreover, that sometimes he can view the misfortune with courage, and spurn the idea of giving way under it; while, at other times, it presents itself in the most frightful colours, and he seems completely deprived of all fortitude to resist its overwhelming influence. This is a true copy, of which I have seen many originals, during commercial distresses and ruinous speculations. What does it teach us? Why, that the moral affliction was borne with comparative ease till the digestive organs and nervous system were impaired through the agency of the mind, when these corporeal derangements impaired, in turn, the mental energies. But how are we to account for the fact that, one day the individual will evince fortitude, and the next despair—all the attendant circumstances of the moral evil remaining precisely as they were? It can be sometimes accounted for by the occasional irritation of food or drink exasperating the morbid sensibility of the stomach and nervous system, and thereby re-acting on the mind. This temporary irritation over, the mind again recovers a degree of its former serenity or firmness, till the cause is re-applied. I was led to this solution of the enigma some years ago, by observing that an aged Hypochondriac was every second day affected with such an exasperation of his melancholy forebodings, that he did nothing but walk about his room wringing his hands, and assuring his servants that the hand of death was upon him, and that he could not possibly survive more than a few hours. Under these gloomy impressions he would refuse food and drink, and, in fact, give himself up for lost. The succeeding sun, however, would find him quite an altered man. The cloud had broken away—a gleam of hope was re-kindled—and the appetite for food and drink was indulged too freely. Next morning, all would again be despair, and nothing but

death could be thought of. So he went on, as regular as light and darkness. But if, on the comparatively good day, he could be kept on a very small portion of food, and two or three glasses of wine, the next would be comparatively good also. This, however, could seldom be done; for as soon as he felt a respite from his miseries, procured by one day's abstinence, he returned to his usual indulgences, and again irritated his stomach and bowels, and through them reproduced despondency of mind. Another curious phenomenon was observed in this case, and, indeed, I have seen the same in many others;—namely, that any purgative medicine, which operated at all severely, brought on an exasperation of the mental depression and irritability of temper. He was always better when the bowels were constipated, than when they were relaxed—clearly shewing that whatever irritated the nerves of the alimentary canal, whether as food or as physic, increased the mental malady.*

* Since the first edition of this Essay was printed, the Hypochondriac abovementioned, (a late General officer) paid the debt of nature, and that in a very sudden and mysterious manner. The day before his death he was in very good spirits, and played the violin, of which he was very fond, for several hours. The next was his bad day, and he did not get out of bed. Nevertheless he ate some dinner, and took two or three glasses of wine. In the evening he desired his butler to go down stairs to his tea, and leave him to take his siesta. In a quarter of an hour afterwards, when the butler returned, his master was dead!

This gentleman, whose talents and amiable qualities endeared him to a very extensive circle of friends, had presented, for 20 years, one of the most exquisite specimens of hypochondriacism which has, perhaps, ever been seen. General K——d had risen in India to the rank of chief engineer, and had led a life of great activity, mental and corporeal, till the age of 50, when he returned to Europe with an ample competence, and with the rational hope of realizing the wish of the poet, and crowning—

“A youth of labour with an age of ease.”

But, in Europe, he began gradually to experience hypochondriacal symptoms; to dissipate which, he rambled over France, Germany, Switzerland, Italy, and other parts of Europe—without being able to fly from his own wretched feelings. About ten years before his death, the hypochondriacism had risen to such a height that he declined going into society, though he still permitted his numerous friends to call upon him. His time was now occupied with the most minute attention to every sensation that he felt in any part of his body, from morning till night, with perpetual predictions of a fatal termination of his disease in a very short time. Gradually, however, the whole of his miseries concentrated themselves in the line of the stomach and bowels; and for seven or eight years he never would allow that he had one moment's respite from the most terrible degree of pain and other indescribable sensations in the rectum, colon, small intestines, or stomach. All the usual dyspeptic remedies were exhausted, without producing any relief; and, as he still had his appetite, and did not waste in flesh, his complaints were considered by his friends to be imaginary, and they all set him down as a decided HYPOCHONDRIAC. Five years

I have known many instances where individuals, having this morbid sensibility of the gastro-intestinal nerves, experienced, after eating certain articles of difficult digestion, such a state of irritability of temper, that they were conscious of the danger they ran by the slightest collision or contradiction from even the nearest relations, and, therefore, avoided society till the fit went off. One gentleman in this state always caused his servants to tie his hands together, lest, in the paroxysm of irritation (without any ostensible cause), he should cut his throat or otherwise commit suicide. There was great difficulty at one time in keeping this gentleman from wine in excess. Tartar-emetic was, therefore, put into it unknown to him, and produced vomiting every time he took it. He persevered for a day or two, and then took such a disgust to his usual beverage that he could not bear the sight of it. This also effectually checked his appetite for food—and for a time, there was almost a total cessation of the irritability of temper and paroxysms of agitation, till he got back to excesses of the table.

It must be confessed, however, that there are some cases where this

before his death, a stone was detected in the bladder, and now a hope was entertained that the key to his pains and other ailments was at length discovered. Sir A. Cooper removed the stone, with his usual dexterity; but as soon as the wound was healed, all the sensations of pain in the digestive organs, and hypochondriacal symptoms gradually returned as bad as ever. The General now kept to the house, and every day was to be his last. Nothing except occasional abstinence in food and drink ever did him much good—but this abstinence invariably mitigated his sufferings, and relieved the depression of spirits and irritability of temper.

On examination after death, there was not a single vestige of disease to be seen in any part of the alimentary canal, from the stomach to the rectum. The brain also was sound, as were the lungs. The cause of death was a rupture of the left ventricle of the heart, occasioned by a small aneurismal tumour which projected from that chamber, and which was filled with layers of concrete fibrine. This little aneurismal projection gave way in the centre, and about eight or ten ounces of blood had been effused into the cavity of the pericardium, through a very small aperture. This disease, of which he never exhibited any symptom during life, and which no kind of auscultic investigation could possibly have detected, was not, I conceive, of long standing, or in any way connected with the state of hypochondriasis under which he had laboured for more than 20 years.

This case offers an illustration of the great length of time during which even a high degree of irritation and pain will continue in the stomach and bowels, without any cognizable trace being left after death. In the General's case, the pain was often so great in the line of the bowels, and especially in the colon, that opium, stramonium, and even belladonna, were ineffectual in subduing it. Could he have been kept on very restricted food and drink, his sufferings would have been greatly mitigated, and his life prolonged. He died at the age of 73, and a more amiable character never existed on earth. Peace to his manes!

periodical or occasional exasperation of the despondency and mental discomfort cannot be traced to any errors in food or drink ; as these exasperations will come on when the individual is adhering to the most strict and temperate regimen. It is difficult to account for such occurrences ; but it is quite evident that they depend on some *physical* cause, probably atmospheric, in the shape of malaria, acting on a nervous system, rendered unnaturally susceptible by the moral causes already described.* These returns of discomfort, while the patient is rigid in attending to the rules laid down for him, are very discouraging, and make him often despair of relief, and distrust the powers of regimen and medicinal treatment. All this is natural enough ; but it may be a consolation to him and to his physician, to know that time and a steady perseverance in temperance will pretty *certainly* overcome the evil, when assisted by proper medicine. *Time* is required for the general nervous system to recover tone. Thus we see people, who have once suffered from ague, relapse occasionally for years afterwards, from causes which are often incognizable by the senses. Can we wonder, then, that when the nervous system of an individual has once received a severe shock, he should be liable to temporary relapses of despondency and irritability for a long time afterwards ? In these cases, the nervous system is to be strengthened by every possible means, short of irritating the digestive organs. The sulphate of quinine will be found a valuable medicine in such cases.

In fine, it is impossible to enumerate the thousand ways in which different people are affected in their tempers and dispositions from this morbid sensibility of nerves—and that without any material feeling of discomfort in the very parts where the focus of morbid sensibility exists. They cannot, therefore, point out the causes of their wretched feelings, nor can their medical attendant always detect them. Their complaints are considered imaginary and pass unpitied—and the unhappy victim of a real physical malady, which preys on his vitals, is thus set down as a Hypochondriac, and so bantered and ridiculed by his friends, that the world is to him a purgatory, from which he has little regret in parting.

* During the last few years, I have been able distinctly to trace, in numerous instances, the disease in question, to malaria, that is, to the influence of a damp situation. It is probably on this account that mild tonics, aided by a proper diet, are so beneficial in restoring health.

SECT. XI.--TREATMENT,
DIETETIC, MEDICINAL, AND MORAL.

THE pains which I have taken to investigate the causes and the nature of the class of diseases which has passed under review, will greatly abridge what I have to say as to the treatment. The real and efficient remedies are very few in number; and, in this respect, they form a striking contrast with the innumerable forms and phenomena of the disease for which they are prescribed. Speaking generally, I verily believe there is more harm than good done by the farrago of medicines which are eagerly swallowed by the dyspeptic patient, at a time, too, when his stomach will scarcely digest the lightest food.

I think I have proved that, whether there be ostensible disorder of the digestive function, or only the manifestation of morbid sympathies at a distance, or both at the same time, there is a morbid sensibility of the gastric and intestinal nerves; and, hence, the first and most important indication is to lessen that sensibility, by withdrawing the causes of irritation, and applying such remedies as have the effect of diminishing irritability. If the sources of irritation could be completely withdrawn, Nature would generally effect a cure, without the assistance of medicine. But as these are sometimes of a moral, as well as a physical nature, we have but little power over the former, and are, therefore, only able to mitigate the symptoms. As it is on the regulation of diet that our chief hopes of cure must rest, and as the system which I must insist on is rather rigid, I have endeavoured to shew the reason why this apparently severe discipline is absolutely necessary for a time, in order to stimulate the practitioner to fearlessly prescribe, and the patient to implicitly adopt it.

There is a great error committed every day, in flying to strong medicine at once, when the functions of the stomach and liver are disordered—the secretions unnatural—and the food imperfectly digested. Instead of exhibiting purgatives day after day to carry off diseased secretions, we should lessen and simplify the food, in order to prevent the formation of these bad secretions. In doing this we have great prejudices to overcome. The patient feels himself getting weaker and thinner during this preparatory course—and he looks to nourishing food and tonics for a cure. But he will generally be disappointed in the end by this plan. From four ounces of thick gruel, sago, or arrow-root, every six hours, he will, under some states of indigestion, derive more nutriment and strength, than from half a pound of animal food and a pint of wine. Whenever he feels any *considerable* additional uneasiness

or discomfort in mind or in body, after eating, he has erred in the quantity or quality of his food, however restricted the one or select the other. If the food and drink irritate the nerves of the stomach, they must be reduced and simplified, down even to the extreme farinaceous diet above alluded to. I have known dyspeptic patients gain flesh and strength on half a pint of good gruel or arrow-root thrice in the 24 hours—and gradually bring the stomach, step by step, up to the point of digesting plain animal food and biscuit.* On six ounces of animal food, with biscuit or stale bread, and a glass of water, with or without a spoonful of brandy, I have known invalids dine for months in succession, and attain, on this regimen, a degree of strength and a serenity of mind beyond their most sanguine hopes. In all or any of the various forms of indigestion which have been described, then, the diet, is the first thing to be regulated. But it is quite preposterous to prescribe a certain quantity, or even quality of food and drink, till the power of the digestive organs is ascertained. I have repeatedly pointed out the criteria by which the patient, as well as the practitioner, may easily determine this important point. I care not if the dyspeptic invalid begins with a pound of beef-steaks and a bottle of Port-wine for his dinner. If he feel as comfortable at the end of two, four, six, eight, or ten hours after this repast, as he did between breakfast and dinner of the preceding day, he had better continue his regimen, and throw physic to the dogs. But if, a few hours after his dinner, he feel a sense of distention in the stomach and bowels, or any of those symptoms of indigestion which have been pointed out—if he feel a languor of body, or a cloudiness of the mind—if he have a restless night—if he experience a depression of spirits, or irritability of temper next morning, his repast has been too much, or improper in kind, and he must reduce and simplify till he come to that quantity and quality of food and drink for dinner, which will produce

* I have again to protest against a misconception of my opinions, in respect to diet, which many readers have fallen into, since the first edition of this Essay was printed. Many have believed and said that I recommended people, whether ill or well, to live on water gruel. I certainly advise those who cannot digest any thing stronger than gruel, to live, *for a time*, on this simple nutriment, rather than keep up a constant irritation in their digestive organs. But the moment they are capable of digesting animal food, I recommend it—and the quantity is to be gradually increased till a fair proportion is attained. A candid perusal of my statements must shew that I limit this rigid discipline to extreme cases, and that I recommend the scale of diet to be gradually increased up to a reasonable quantity and variety, whenever the organs of digestion are sufficiently strengthened to admit of this latitude in food and drink, with advantage, or even with impunity. If people will misconstrue my opinions after this, I cannot help it.

little or no alteration in his feelings, whether of exhilaration *immediately* after dinner, or of discomfort *some hours* subsequent to this meal. This is the criterion by which the patient must judge for himself. The scale of diet must be lowered and simplified down even to water-gruel or arrow-root, if necessary, that is, if nothing higher can be borne, otherwise a cure can never be expected. Speaking generally, the dyspeptic invalid may commence the trial with from four to eight ounces of plain and tender animal food, with stale bread and few or no vegetables, at two o'clock, or as near that hour as possible, drinking, after the meal, a table-spoonful of brandy to two or three wine-glassfuls of water. If, after this, he feels light, and rather inclined to exercise or amusement than to take a nap on the sofa, he has hit the point—and to that system he should rigidly adhere. If he feel oppressed in body, or discomfited in mind, he must reduce the quantity gradually—if he feel a sense of emptiness, or faintness, or debility, he must increase the quantity of his food—but this will very seldom be necessary. If the weak brandy and water will not be taken, sherry and water (a wine-glassful to the tumbler) may be allowed; but it is not so salutary as the former. Every thing that is taken beyond this, at dinner, is at the invalid's own peril—and if he prefer wretched health of body and mind to the momentary gratification of sensual indulgence at table, let not the physician give his sanction to such regimen. I have distinctly said that the invalid may eat and drink as much as he pleases—provided he experience no considerable *increase* of his morbid feelings from food and drink, within the twenty-four succeeding hours. If he *do* feel an increase of these, the necessity of the restriction which I propose is self-evident, and so far from being the imposition of a penance, it is, in reality, the removal of one.* Let it be remembered that I am speaking of the dyspeptic stomach, and not of that which is in the enjoyment of all its healthy powers and of all its natural sensibilities. To the man in health, and who takes regular exercise, almost every kind of food is wholesome, as Celsus remarked nearly two thousand years ago—"SANIS OMNIA SANA."

* There will be found in practice a certain proportion of cases where we must modify this rule, on the principle that of two evils we ought to choose the lesser. Thus some people, if kept on so low a scale of diet as to secure them from discomfort in the stomach, will fall into a state of inconvenient *debility*. In such instances, we must raise the scale of diet, even at the expense of some discomfort. The judgment of the practitioner will here be put to the test. If he reduce the quantity of food too far, he induces debility—if he raise it too high, he will keep up irritation, and perpetuate disease. The happy medium can only be ascertained by a most careful examination of the individual, and of the effects of regimen and medicine. Of the two horns of the dilemma, it is certainly safer, in the end, to run on that which leads to *debility*, than on that which keeps up *irritation*.

But the invalid may ask—"can I not have my ailments removed without abridging my indulgences?" No! and the practitioner who undertakes the treatment under such conditions, betrays either a want of principle or a want of judgment.

Well, then, the patient adopts such a simple and abstemious plan of diet, that he feels no material augmentation of his sufferings after food; but still he is far from well. He escapes those periodical *aggravations* of his complaint; but the medium ratio of valetudinary health remains as before. There must be time for all things. Effects do not always cease in the living machine, when their causes are removed. It may have taken a long application of noxious agents and improper regimen to produce the morbid sensibility of the nerves, and it will require some time to reinstate them in their natural tone of feeling. Besides, the causes that originally produced the disorder may have been of a moral nature, and may still continue to operate. In this case, we can only prevent the aggravation of the complaint by proper diet, and mitigate the symptoms by proper remedies. The rest must be left to time and to moral means.

Although there is much peculiarity of disposition, in regard to diet, observable in different individuals, and therefore some latitude to be allowed on this account, yet experience has shewn that, however the proper *quantity* of food may differ in different constitutions, there is one broad rule as to *quality*, which is seldom inapplicable to the great majority of dyspeptics.

The least irritating, and the most easily-digested aliment, is unquestionably farinaceous food, at the head of which we may place good grit-gruel. I have known many who could digest only this, without unpleasant sensations in the stomach, or some other part of the body. When such is the case, the nerves of the stomach are in a high degree of morbid sensibility, and great caution should be taken not to irritate them by premature attempts at more nutritious food. No person is in danger of starvation who can take and digest a pint—or even less, of good gruel in the twenty-four hours. Arrow-root, sago, tapioca, rice, salep, are all in the same class; but few of them will bear repetition so well as gruel. A little sugar, and a tea-spoonful of brandy in each cup of the gruel may be permitted.*

* There are many individuals who cannot take gruel, without its turning acid on the stomach. It should then be discontinued, and some other farinaceous food, as rice or other plain pudding substituted. Panada, with a little brandy or wine, will sometimes agree when the gruel and other farinaceous substances disagree. Soujee, an oriental grain, now procurable in most shops, is an excellent farinaceous food.—*10th Edition.*

When the nerves have been kept free from irritation for a short time by this mild regimen—when the tongue cleans—the appetite returns—the sleep becomes more refreshing—and the intellectual, as well as the corporeal feelings and functions more tranquil, beef-tea may be used with well-toasted bread—then a small quantity of chicken or mutton ventured on, and gradually increased. Whenever any very uneasy sensations of mind or body occur, within the 24 hours after this trial of animal aliment, it should be decreased; or, if that will not do, wholly omitted, for a time, and the farinaceous food resumed. If no bad effects follow, the quantity of chicken or mutton may be progressively increased to six or eight ounces, with stale bread—but not too much of that. No other vegetable matter can yet be safely ventured on. While the farinaceous regimen is necessary, little or no drink should be taken, unless thirst be felt, when barley-water or toast and water, in small quantity, may be allowed. When the chicken or mutton can be borne, the drink should vary in quantity, according to the feelings of thirst, and the number of ounces of the animal diet which can be tolerated. Thus, if the patient cannot take more than an ounce of animal aliment, a wine-glassful of water, with a tea-spoonful of brandy in it, is as much as should be taken after the repast, unless thirst should urge, when some toast and water, with a very little, or without brandy, may be taken. If eight ounces of mutton can be borne with impunity, a tumbler of water, with a table-spoonful or two of brandy, is a fair allowance, or a glass or two of good wine.

From poultry and mutton, the dyspeptic should cautiously ascend to game and other species of animal food—dressed in the simplest manner, and still with stale bread or biscuit. I would strongly advise that the *quantity* should never exceed half a pound in weight, even when that can be borne without a single unpleasant sensation succeeding. This is quite enough, and often too much, for an invalid, who frequently acquires a degree of strength and firmness, though not fulness of muscle, on this quantity, which in time surprises his friends, as well as himself. When arrived at the power of *digesting* six or eight ounces of meat, he may vary the kind of animal matter considerably. Lamb, hare, tender beef, tripe—nay, venison, may be taken, provided the golden rule be observed of always keeping to that *quantity* which produces *no languor after eating—no unpleasant sensation of mind or body during digestion*.* I cannot urge this rule too strenuously on dyspep-

* It may seem strange that I have not included *fish* in the list of edible matters for the dyspeptic. But, in truth, it is a very precarious species of food, for weak stomachs. Salmon is extremely improper, and even the white fish is very apt to turn

tics. Their happiness—perhaps their welfare—and the happiness and welfare of many who are connected with them, depend on its strict observance.

It is needless to dwell on the endless catalogue of *improper dishes*, as soups, stews, ragouts, &c. Almost all are improper for the dyspeptic, or at least doubtful, if not *dangerous*, that are not included in the above list. Even a mealy potatoe will often irritate the nerves of the stomach (without any perceptible sensation *there*), and pass undigested, after producing a great deal of wretched feeling in distant parts of the body. The same may be said of every kind of fruit and vegetables. There is such a tendency to acidity in the weak and irritable stomach—vegetable matters are so prone to ferment and acidify—and acid is so peculiarly offensive to the morbidly sensible nerves of the alimentary canal, that the dyspeptic invalid cannot be too much on his guard against fruit and vegetables of every description, however innocent they may seem to be, as connected with disagreeable feeling in the stomach itself. In general, however, plain puddings, made of bread, ground rice, tapioca, and the like, are admissible, when the stomach has recovered some degree of tone; but when made with raisins, currants, or other dried fruit, together with eggs, and the various *et ceteras* of refined cookery, they are dangerous articles of food for the dyspeptic. As for cheese, pickles, nuts, onions, and a variety of provocatives, they are generally injurious in dyspepsia, and as such should be avoided. In proportion as strength of stomach returns, well-boiled vegetables, and especially a mealy potatoe, may be cautiously tried.

In respect to drink, my firm conviction is, that water is the best; and that, till the habit of water-drinking can be acquired, a dilute mixture of brandy and water, is the next best beverage. Still I have no objection to a glass or two of sherry, under the guidance of the criteria which I have so often laid down. The sooner, however, that every species of stimulating drink can be laid aside, the better. A cup of coffee after dinner is far preferable to wine. Malt liquors are very questionable, except in particular constitutions.

It is a certain fact, however, that more mischief is done, in general,

rancid and greatly irritate the gastric and intestinal nerves. I would advise the dyspeptic invalid to be cautious of fish. Without butter or other sauces it is insipid—and with these additions it is seldom safe. I have known very serious attacks of indigestion, in its febrile form, produced by turbot and even cod. Shell-fish, as crab, lobster, and oysters, are, in general, much less injurious, and can be borne without detriment by the dyspeptic stomach, when the irritability of its nerves has been a good deal subdued by a proper course of diet and medicine previously.

by too much food than by too much wine. The latter stimulates the stomach, and the whole system no doubt, but it is soon discharged from the stomach, and from the body altogether, by the various outlets. Not so the food, if in too large a proportion. The stomach and bowels are oppressed by the undigested part—or over-exerted in the process of digesting more than is necessary, and the consequence is, that gastric and constitutional *irritation*, much worse than vinous *stimulation*, is kept up for a long time after each immoderate meal.

The other meals are of some consequence to be attended to by the dyspeptic invalid. In the morning, if the nervous irritability is not in the highest degree (necessitating the use of gruel), coffee, cocoa, or good black tea, with well-toasted bread, cold, and with very little butter—or, what is better, with a little cold or hot meat, may be taken, and nothing more till dinner, if at two o'clock. Where tyrant custom compels to dine late, a slice of meat and biscuit, or some bread and butter, should be taken at one o'clock. The tea should be the same as the breakfast, but generally without animal food:—And a cup of gruel, sago, or panada, with a spoonful of brandy, is the best supper. Where dinner is taken at an early hour, however, a slice of meat, with a little biscuit, and some weak brandy and water, or sherry and water, may be necessary in some constitutions, before going to bed. Many people cannot sleep, if they go to bed with an empty stomach; and as sleep is of such great importance to the invalid, it should not be prevented by the want of a slight repast at bed-time. I am no advocate for unnecessary restriction. The feelings of nature are to be always attended to—but not the *immediate* feelings of comfort alone—the *subsequent* sensations are to be taken into account. Where farinaceous food can be relished for breakfast (as gruel and milk, oatmeal porridge and milk, bread and milk, &c.) it is certainly better than tea. The milk or cream should be sparingly used with this last beverage. Many dyspeptics breakfast best on a mutton-chop and stale bread.

By adherence to the foregoing plan, varying the quantity according to the feelings subsequently experienced, the surest foundation is laid, not only for health, but for happiness. Upon a regimen of this kind, with proper exercise, the body will be brought to the greatest degree of permanent muscular strength of which the individual constitution is susceptible—and the intellectual powers will be raised in proportion. Equanimity of mind will be attained, if attainable at all; and where moral causes of irritation or affliction cannot be avoided, they will be greatly neutralized. Under such a system of diet, the corporeal frame will be rendered more capable of undergoing fatigue—and the mind

more able to resist misfortune, than by the richest dishes and most luxurious wines.*

The rigid system which I have proposed is not the creature of speculation, engendered in the closet. It is that which many, to my knowledge, have adopted with the most perfect success—it is that by which I have conquered the most intense degree of dyspepsia in my own person. Those who have courage and perseverance to reap the fruits of such a system, will hardly be induced to change it too soon, however strongly they may be tempted by the luxuries of the table, and the seductions of convivial society. It would be well for those in the enjoyment of present health, if they employed a certain degree of it as a preservative of that invaluable blessing! But this I do not expect. I am addressing those who have tasted the bitter cup of sickness—and especially those who have experienced the horrors of dyspepsia. The latter alone can appreciate the luxury of immunity from the terrible feelings of mind and body, engendered by that worst of human afflictions.

Before quitting the subject of diet, however, I would seriously advise those whose situations in life subject them to great mental exertion, as well as trials of their fortitude, to make use of this abstemious regimen when more than usually oppressed by intellectual labour or tribulations of mind, instead of flying to the stimulus of wine and savoury aliments, as temporary recruits for the exhausted spirits. This last is a dangerous expedient, and fails at all points. The prize-fighter and the pedestrian live abstemiously when preparing for feats of corporeal activity. The candidate for intellectual prizes must pursue a similar course, if he mean to be victorious in the end. Both experience and observation have convinced me that the mind can undergo a greater quantum of labour when the body is kept in an unexcited state, than when stimulated by the luxuries of the table. The same remark will apply to those who have become the victims of misfortune. Let them not fly to the momentary solace of *stimulants*, which only consume more rapidly the taper of life, and render them less able to bear the vicissitudes of this world.

When a man has escaped the miseries of dyspeptic feelings, and brought the sensibilities of his stomach to a natural state, by great

* Captain Head states that, when he commenced his travels in South America, he was quite unable to undergo the necessary exertion, till he adopted the plan of living on plain animal food and water only. He could then, in a short time, tire out many horses in his equestrian journeys.

attention to diet, he should be careful how he deviates too soon from the rigid regimen by which he was restored to health. Nothing is so liable to relapse as dyspepsia—and indulgence in variety of dishes, or vegetables and fruit, with bad wines, will be almost certain of making the individual pay dear for the experiment. But it is of still more importance to keep to a low *quantity* of food. The least over-exertion of the stomach in mastering a larger proportion than it can easily digest, will be sure to rekindle the morbid sympathies of the body, and the wretched feelings of the mind. The patient must always balance between irritation and debility. When he feels irritation he must lessen and simplify his food—when he experiences much debility, he must increase it. The false debility, or rather feeling of debility, already described, must not be confounded with real debility.

SECT. XII.---MEDICINAL TREATMENT.

THE foregoing rules of diet will pretty generally apply to most cases and stages of dyspepsia, whether consisting in morbid sensibility of the gastric nerves, without apparent disorder of function; or accompanied by the various symptoms of indigestion and biliary derangement. It will, also, apply to what has been termed “inflammatory dyspepsia,” equally as well as to that which is denominated “nervous.” This dietetic regulation is the basis of the treatment. Without it no effectual cure can be accomplished—and by it alone, nine cases in ten of common indigestion, in its earlier stages, might be removed. But much auxiliary assistance may be derived from a judicious application of medicine.

After adjusting the subject of diet, our attention should next be directed to the state of the secretions. The mode of ascertaining their *habitual* condition is too often erroneous. Thus, a brisk purgative is given, and then the secretions are examined. But the same medicine, if given to a person in health, would very frequently evacuate matters that would be considered morbid. Besides, the action of purgatives will often rouse the liver and other glands to pour forth secretions very different in quantity as well as quality from what are habitually secreted. The secretions cannot, in fact, be ascertained by one or two inspections. They should be examined when medicine has been taken, and when no medicine has been taken. They should also be examined after the operation of different kinds of medicine. Mercurial aperients will bring

down bile that is habitually defective.—Rhubarb will tinge the secretions yellow that were previously pale—magnesia will render the motions pale that were formerly dark-coloured—salts will expel watery motions—aloes, solid evacuations. From this it will be seen, how necessary it is to think a little before a plan of medicine is determined upon.

When there is unequivocal disorder of function in the liver and digestive organs, as ascertained by the symptoms already described, it will generally be found that the secretions are unhealthy. The change of diet will, in itself, greatly correct this morbid condition of the secretions—but, in the meantime, they must be daily removed from the alimentary canal, in order to take away one source of irritation.

In doing this, much caution is necessary. Infinite mischief, as I have stated before, is daily occasioned by the indiscriminate employment of strong purgative medicine, in dyspeptic complaints. Bad secretions may thus be *removed*, but their reproduction will never be thus *prevented*. It is by withdrawing the sources of irritation, and gradually improving the functions of the liver, the stomach, and the intestinal canal, that the formation of morbid secretions can be arrested. Purgation, therefore, should be cautiously employed. It may be proper, just at the beginning, to clear the alimentary canal of all its lurking contents; but, after this, I do maintain that the main object is to produce but one evacuation daily, and that of a solid, rather than a liquid consistence. If practitioners knew the misery that is often produced by irritating cathartic medicines in dyspeptic and hypochondriacal complaints, in this country, they would be more sparing than they are of their calomel at night and black-draught in the morning.

Experience has shewn, that there are some medicines which produce little irritation in the stomach and upper bowels, and act principally on the colon and rectum, as, for instance, aloes and sulphur. Jalap, calomel, salts, senna, antimony, and many other purgatives, produce a good deal of disorder in the stomach, and along the whole course of the alimentary canal, causing a copious secretion from the glands and secreting surfaces of these parts, as well as of the liver. They are very useful upon occasions, to remove all offending matters, but should not be too often employed. A combination of several different kinds of aperient medicine, that will act mildly, but gradually, along the whole line of the digestive apparatus, is far preferable to any one medicinal substance. Simplicity of prescription is very generally, on this point, accompanied by insufficiency of the effect designed. In dyspeptic cases, and especially where there is morbid sensibility, in any considerable degree, in the stomach and bowels, it is of great consequence to join

hyosciamus, or some gentle anodyne with the aperient. When the morbid sensibility is not in great degree, the anodyne may be left out. The following formula may be found pretty generally applicable as an habitual aperient. It contains a very minute portion of mercury, and which may be taken with safety.

℞. Ext. Colocynth. Comp.
 Pil. Rhei Comp. āā ʒij.
 Pil. Hydrarg. gr. xvj.
 Sapon. Venet. gr. iv.
 Ol. Caryoph. gt. iij.

M. ft. Pil. xxij. Capiat j. ij. vel iij. horâ somni, vel statim ante prandium.

These pills should be taken according to the effects they produce. If one be sufficient to procure one easy evacuation the succeeding morning, well and good. If not, two, three, or any number may be taken, so as to effect the purpose desired. If much irritation prevail, from three to five grains of extract of hyosciamus may be taken at night with the pills.

There will be many cases where the irritability of the stomach and bowels will not bear more than a few grains of rhubarb and magnesia, without producing much distress. Where acidity prevails much, with disposition to pain and flatulence in the stomach, some carbonate of ammonia, or the spirit. ammoniæ aromaticus, should be conjoined with magnesia and rhubarb.*

* The pain produced in the stomach by acidity is very distressing; but this pain is not seldom owing to a very different cause, namely, a *rancidity* of the contents of the stomach, which soda, magnesia, and chalk, will not remove. In some instances, which have lately come under my notice, the pain in the stomach, and the discharge of clear water from the mouth, were ascertained to be owing to the presence of an extremely acrid alkali, which strongly effervesced with, and neutralized acids. One of these cases was that of a medical gentleman, who analyzed the fluid discharged from the stomach, and found it to be a strong alkali, which effervesced with, and neutralized sulphuric acid. In some of these cases, the mineral acids and bitter tonics were successfully employed, and all fat animal food avoided. I lately knew an instance where distressing heart-burn was always removed, for a time, by eating pickled salmon, with plenty of vinegar! Where heart-burn, therefore, exists, we should endeavour to ascertain whether it is owing to the presence of an acid or an alkali in the stomach. The nature of the diet used, and the effects of magnesia or other absorbents taken into the stomach, will readily elucidate this question, independently of any analysis of fluid discharged. It is wonderful, indeed, what a variety of strange and irritating secretions will be generated in the alimentary canal, when the nerves are disordered, and the digestive process imperfect. The only *radical cure* is a restitution of vigour to the organs of digestion—especially the stomach and liver.

But, in fact, there is great difficulty in adjusting the aperient to the state of the case, so as to fulfil the essential indication—that of moving the bowels once daily—and always with as little irritation as possible. Whenever thin, watery, or slimy motions are produced, more harm than good will be done.

In proportion as the biliary secretion is deranged, the quantity of the mercurial must be increased;* but where there is no appearance of the liver being in fault, the less mercurial the better, especially where the nerves of the stomach exhibit symptoms of much sensibility.† In such cases, the taraxacum (dandelion), and also the sarsaparilla, will be found very advantageous, either singly or combined. The proportions and combinations must vary, according to the nature of the case.‡

The decoction of the fresh root of dandelion, four ounces to the pint, with some ginger and supertartrate of potash, forms a very useful me-

I was informed by a medical friend and patient, that he has found *cream* a specific for heart-burn in some of these cases; and in several instances, of late, I was able to verify this statement.—10th Edition.

* It may, in some cases, be prudent to touch the mouth with mercury; but then the disease is HEPATITIS rather than DYSPEPSIA. When this course is necessary, the patient should be apprised of the circumstance, and warned to keep himself confined to the house, till the medicine is no longer required. Where dyspepsia attends the hepatitis, as is almost always the case, the blue-pill is preferable in this country to calomel, and should be gradually, but steadily introduced till the mouth becomes sore, or the evacuations yellow and feculent. When this takes place, the symptoms of hepatitis generally vanish. It is in such cases that the nitro-muriatic acid bath, applied to the feet, legs, and arms, is often of very considerable benefit. This remedy, like most others, was overrated on its first introduction, and has, consequently, fallen almost entirely into disuse—unmeritedly so. Its application is attended with too much trouble for patients and practitioners in general; and this is one cause of the infrequency of its employment. It is not so well calculated for the morbid sensibility of the stomach and bowels, of which I have been treating, as for a torpid state of the liver, a paucity of bile, and a constipated state of the bowels.

† The following formula is without any mercury :—

℞. Extr. Col. Comp. ʒij.
 Pil. Rhei Compos. ʒij.
 Saponis gr. vj.
 Ol. Caryophill gt. iv.
 Misce, ft. Pil. xx. Capt. j. ij. vel. iij. horâ somni.

‡ Formula :—

℞. Decoct. Taraxaci. ʒivss.
 Extr. Taraxaci ʒij.
 Carb. Sodæ ʒj.
 Extr. Sarsæ ʒj.
 Tinct. Gent. Comp. ʒss.

Misce, et capt. coch. 1½ mag. bis die. 10th Edit.

dicine, where the biliary secretion is defective, and the urinary secretion loaded and scanty. The dandelion increases both secretions, and tends to keep the bowels open.

Before taking leave of the subject of aperients, I may add, that the use of injections as auxiliaries, should not be neglected. In high grades of gastric and intestinal irritability, it is hardly possible to give any aperient by the mouth—even castor oil—without producing disagreeable effects; and here the employment of injections is of great advantage. The rigid system of diet is our sheet-anchor, till the morbid sensibility of the nerves is lessened or removed, and then aperients may be used with greater safety and greater latitude, as well as an increased allowance of food.*

But are we possessed of no means of reducing this morbid sensibility of the nerves, in addition to the plan of unirritating diet? We certainly can greatly assist the dietetic regimen by other means. The effect of counter-irritation is often very conspicuously beneficial. A small plaster of tartar-emetic and Burgundy pitch applied to the pit of the stomach is one of the most powerful counter-irritants we possess, and is far superior to blisters. A scruple of the tartrate of antimony to each drachm

* The white mustard-seed has lately attracted considerable attention; and I have known a great number of dyspeptic invalids take it—some with apparent advantage, others without much effect—and in a very few instances it appeared to do harm. It certainly is not calculated for a very irritable state of the gastric and intestinal nerves—since all spicy or hot aromatic substances are injurious in such cases. It is where the bowels are very torpid, the appetite bad, and the whole system languid and sluggish, that the white mustard-seed promises to be serviceable. If it keep the bowels open, and produce no unpleasant feeling in the stomach, alimentary canal, or nervous system, it may be taken with safety. If it do not produce an aperient operation, it can do little good, and may, perchance, do mischief.

Since the first edition of this Work was published, Dr. B**** (I believe) has issued a pamphlet on the subject of white mustard-seed, in which he undertakes to prove, both by experiments and observation, that this far-famed nostrum is almost entirely destitute of any medicinal quality—that it hardly ever proves aperient, but, on the contrary, has a tendency to constipate the bowels—that it causes much irritation in the first passages—and that from it is disengaged a quantity of sulphuretted hydrogen gas, which communicates a most abominable odour, not only to the secretions, but to the breath and the perspiration, thereby rendering the individual loathsome to himself, and disagreeable to his neighbours. I am afraid the character drawn of the white mustard-seed by Dr. B. is not much overcharged. I have seen very few unequivocal good effects from this substance, for the accounts given by patients are often deceitful, and, at all events, a pungent seed of this kind, where it does not carry itself off by an aperient quality, must, in numerous cases of gastric and intestinal irritation, be productive of mischief, of which, indeed, I have recently seen two or three proofs. The remedy, however, is rapidly losing its reputation.

of the Burgundy pitch, will, in two or three days, produce a copious crop of pustules, which will continue to discharge for a week afterwards, and afford much relief. I have no objection to a few leeches being previously applied to the part, especially if much tenderness is complained of on pressure:—for although irritation and inflammation are two very different conditions, and require different treatment, yet the former sometimes leads to the latter, and we frequently see the two combined. On this account, the application of a few leeches is a safe precursor to the counter-irritation. Small doses of the nitrate of potash, in common effervescing draughts, are also very useful in such states.*

When irritation of the whole nervous system depends, as it often does, on irritation of the stomach, it will sometimes be necessary to keep up a steady, but gently soothing effect on the gastric nerves, by anodynes, combined with small doses of blue-pill. The biliary secretion is sometimes so acrid, that the patient is sensible of its descent into the duodenum, and experiences the most indescribably disagreeable sensations at the time—producing a kind of shudder through the whole frame, and a radiation of morbid feelings from the region of the duodenum in every direction. This I experienced myself, and was quite satisfied that it proceeded from the contact of bad bile with the morbidly sensible nerves of the duodenum. In such cases, two grains of extract of hyosciamus, one grain of blue-pill, and two of the compound powder of ipecacuanha, every six or eight hours, will keep the irritation in check, and help to correct the vitiated state of the biliary secretion. With these medicines, a little rhubarb and magnesia at night, merely to ensure one action of the bowels daily, is all that should be taken—and this only when the bowels will not act spontaneously.

Bearing in mind the intimate sympathy between the external surface of the body and the internal surface of the alimentary canal, the tepid bath is an important remedy, as a soother of irritability. The forenoon or the evening is the time to be selected, and the subsequent feelings of the individual will be the best criterion for its repetition. When a little farther advanced in convalescence, the shower-bath is a powerful auxiliary to the means already described. At first it should be tepid, and gradually reduced to cold.

* Formula:—

R. Carb. Sodæ.....	ʒvj.
Nitrat. Potassæ	ʒi.
Ant. Tart.....	gr. j.
Sacchari puri	ʒss.

Misce, ft. Pulv. xij. Capt. j. bis terve in die, ex cyatho aquæ, cum coch. j. mag. succi limonis recentis in actu effervescentiæ.

I now come to an important class of remedies for the lessening of morbid sensibility of the nervous system—namely, the vegetable bitters and tonics. The state of the appetite being a pretty fair index of the state of digestion,* experience, in all ages, has confirmed the benefit to be derived from this class of medicinal substances in dyspepsia, when carefully managed. It is a well-known truth, that debility is the parent of irritability, and it is on this principle only that tonics can be safely employed. But when irritability is great, tonics do more harm than good; and, in fact, increase instead of diminishing the morbid sensibility of the stomach and bowels. On this account, they cannot be safely employed till the irritability is reduced to a certain point by mild diet and by soothing medicines, when they may be applied with the most decidedly good effects. If they are given before this reduction of morbid sensibility, they produce great disturbance in the system, and I am confident they frequently change irritation into inflammation. In this case, as in the case of food, the feelings of the individual are unerring criteria of the salutary or noxious effects of bitters and tonics—and these should be scrupulously attended to by the patient and practitioner. Many hypochondriacs have been driven into a state of insanity by the stimulation of wine and tonics, when the morbid sensibility of the stomach was in a high degree. Wine and tonics, like opium, will overpower the sensibility of the nerves—for a few hours, in these cases, and some sleep may follow—but the terrible exasperation of irritability which succeeds, when the first effects of stimulation are over, have produced many an act of suicide, besides the thousand lower grades of mental misery, to which the unfortunate dyspeptic and hypochondriacal invalid is subjected by injudicious treatment. The dreadful depression of spirits and despondency of mind, resulting from this temporary exhilaration and excitement, are so much the more dangerous, as they too often lead to a repetition of the baneful causes that produced them. There is no point in practice which requires so much caution and skill in the

* This must be understood with some restriction. The appetite often outstrips the digestion, and thus proves an unfortunate, or even a dangerous temptation to the invalid. If a dyspeptic does not leave off with some inclination to eat more, he generally suffers for it before twenty-four hours elapse. This sacrifice of a few ounces of food, short of satiety, is well repaid by the comfortable feelings in the evening. Indeed, I have found that, in a considerable proportion of dyspeptic cases, there is a voracious and almost insatiable appetite at the very time when the stomach is in the worst condition. In two or three instances, a very limited quantity of food prevented this voracity—whereas, if a full meal was indulged in, there was a canine appetite in the course of a few hours afterwards! This state of things appears to result from an inordinate secretion of unnatural gastric juice, or some vitiated fluid.—10th Edition.

practitioner as the exhibition of this class of remedies in dyspepsia and hypochondriasis. The mode of administering bitter tonics will be presently described, after premising a few observations on a preparation which I have sometimes employed with success in irritable states of the mucous membrane lining the stomach and bowels.

I have now to draw the attention of the profession to a medicine, which I believe has never been employed in this class of diseases, but which, I apprehend, from what I have already seen, will be found a very valuable remedy.* It is well known to surgeons, that the nitrate of silver is one of the most powerful means of allaying irritability, when applied externally to painful and irritable sores. It is also well known that this medicine may be given internally to the extent of several grains daily, for months in succession, in cases of epilepsy, and that without producing any bad effect. Indeed, it is now almost the only remedy on which any dependance is placed in the above-mentioned formidable complaint. My attention was first excited towards its effects on the stomach and bowels, some years ago, while exhibiting it to a young gentleman employed in a public office of this metropolis, who laboured under epilepsy, and who, at the same time, had the usual symptoms of dyspepsia, and great irritability of the stomach and bowels. Considering the latter complaint as one of minor consequence, I gave the nitrate of silver alone, beginning with half a grain thrice a day, in crumb of bread, and gradually increasing it to two grains thrice in the 24 hours, beyond which I did not carry the dose. After the first month he had no return of the epilepsy; but the medicine was continued till the expiration of three months, when it was finally left off. He took no other medicine whatever; and in the course of the three months he was completely cured of all his dyspeptic symptoms. I was a good deal surprised at this event, and was at a loss to account for the result. But several cases have since occurred, which lead me to think, *first*, that epilepsy very often depends on morbid sensibility of the gastric and intestinal nerves—and, *secondly*, that it is by removing this morbid irritability of the alimentary canal, that the nitrate of silver sometimes cures epilepsy. We know, for instance, that convulsions and epilepsy are frequently produced by worms in the first passages, although no symptom of *sensible* irritation or pain may exist there at the

* Since the first edition of this Work was published, I was a little surprised by a gentleman presenting me a prescription for dyspepsia, which had been given him by a physician on the coast some years ago, containing the nitrate of silver. I am very glad to find this coincidence, although it proves an anticipation of my employment of the remedy.

time—the worms producing the phenomena above-mentioned by their action on the special or organic sensibility of the parts, and thence, by sympathy, on the brain and spinal system of nerves. The removal of the worms cures the convulsions and epilepsy, by removing the cause of irritation—and the nitrate of silver very probably acts, in other cases, by lessening the sensibility of the nerves, and thereby rendering them unsusceptible of irritation. On this principle, I have administered the nitrate of silver, of late, in cases where the morbid sensibility of the gastric and intestinal nerves was produced by other causes than worms, and gave rise to other phenomena than epilepsy, and hitherto with marked advantage. I have lately exhibited the same medicine, in combination with small doses of quinine, to many patients affected with obstinate dyspepsia, in that form which is more marked by the morbid sympathies of distant parts than by *apparent* disorder in the stomach and bowels themselves, and I have reason to believe, that the effects will be most beneficial. In one case, indeed, that of an elderly clergyman, who had, for some years, laboured under a number of anomalous symptoms of a very distressing nature, especially affecting the head, the organs of sense, and the powers of the mind, but in whom the stomach and bowels exhibited marks of morbid sensibility, the nitrate of silver and sulphate of quinine have been productive of the greatest relief, and I may say that he is completely cured.

I know too well the fallacies of medicine to hold this remedy up as a specific for removing morbid irritability of the *primæ viæ*; but I think I may safely recommend it to the notice of my professional brethren, as an *auxiliary* in such cases, which it may be worth their while to try. It may be exhibited in the form of a pill at night, combined with any bitter or aperient extract. It will not interfere with the operation of almost any other medicine with which it is administered. Thus, half a grain of nitrate of silver, and two, three, or four of extract of hyosciamus, may be given every night at bed-time, and the dose gradually increased to two or three grains daily. No inconvenience can possibly result from the administration of the medicine, if not continued beyond two months at a time.* But I must remark on this, as on almost every

* In the first edition of this Essay, I did not state my reasons for limiting the exhibition of nitrate of silver to two or three months, thinking the reason was sufficiently known among medical practitioners, by whom alone the medicine should be administered. In several cases, where the nitrate of silver has been given for five, six, and seven months, without intermission, the complexion has been changed into a dark hue; and, on this account, the limits of three months have been prescribed, by general consent, of late years. A case has lately occurred at Brighton, where a gentleman has lost his fair complexion by a long-continuance of the remedy; and, I

other medicine, that unless the strictest attention be paid to diet, all medicines will fail. I particularly wish to be understood as recommending the nitrate of silver only as an auxiliary in a complaint which often baffles the practitioner, and where all auxiliaries are occasionally needful. The quinine may generally be given at the same time, not in pills, but in solution.*

In respect to bitters and tonics, as a class of remedies calculated to lessen morbid sensibility, and improve the function of digestion, there can be no doubt as to their utility, when given at the proper period. Of late years, I have found in the sulphate of quinine, most of the good properties of the other tonics, devoid of their bulk and other nauseating qualities. It is, perhaps, the only tonic which we need in general, and it must ultimately supersede most others. In small doses, as half a grain, thrice a day, dissolved in a tea-spoonful of any bitter tincture, as the compound tincture of gentian, and diluted with a little toast-water, or any other fluid, it has an excellent effect on the stomach, soothing its nerves, cleaning the tongue, improving the appetite, strengthening the digestion, and imparting tone and tranquillity to mind and body. If given in larger doses, especially at the beginning, it stimulates too powerfully, and may do harm. It should, therefore, not be exhibited, till irritation is lessened by the subduction of improper food and the administration of proper medicines: and then it should be commenced in small doses, very gradually increased, and its effects on the feelings watched as in respect to food. Managed in this way, it acts with surprising efficacy, and it is not unusual for it to produce such

understand, he is in high dudgeon with his medical attendants. The object was the cure of epilepsy; and in this business I had no concern. I can assert, however, without fear of contradiction, that there is no instance on record, where the complexion has been affected by the medicine when restricted to three months' administration. In cases of common dyspepsia, I should never dream of giving it at all; and in obstinate cases, for not more than a month or six weeks. In epilepsy, I have given it to at least fifty patients, and never had the slightest reason to regret the practice, as I always stopped its employment at the end of three months, whether the disease was cured or not. No other objection has ever been urged against the nitrate of silver in epilepsy, and God knows, the "tincture of the skin" is a trifling evil, compared with a disease which every day endangers life, and almost certainly ends in loss of reason! But even this "tincture of the skin" is avoided with perfect security, by the precaution above-mentioned.

* A medical gentleman told me, with an air of importance, that the nitrate of silver was decomposed by the mucus of the stomach, and that consequently I was deceived as to its medicinal operation. It is hardly worth while to make any reply to this observation. Do we not see the nitrate decomposed the moment it touches a sore? Is it of no efficacy on that account?

a change in the appearance of invalids in a month or two, that the same person is hardly known. It should not be always given in pills, as it is sometimes liable to pass undigested in such forms, and thus disappoint the practitioner. Its effects are wanted on the *stomach* rather than on the *bowels*, and when medicines are designed to operate on the former organ, they should generally be given in a liquid, or in a very soluble form, which is not the case with pills, unless made soft, and used the day they are compounded.*

It is useless, as indeed it would be endless, to enter into an examination of the farrago of bitters, tonics, stomachics, and other remedies which have been recommended, and are daily employed in the various forms and shades of indigestion and hypochondriasis. All the indications which they are capable of fulfilling may be fulfilled, in my opinion, by the few which I have pointed out—and why need we have recourse to subordinate agents, when the principals are at command?

But as I have taken great pains to explain the *nature* of this class of diseases, and the *objects* which it is desirable to obtain, so it would be waste of time to dwell on the minor means of effecting these objects. They will suggest themselves to every medical practitioner, and none but medical practitioners should attempt the treatment of a class of maladies which requires the utmost skill to manage. The dietetic regimen, indeed, may be put in force by any invalid, under the guidance of the rules I have laid down; but let him beware how he meddles with the medical management of his complaint. If the indications to be fulfilled demand the minutest attention of the medical practitioner, how is it possible that the patient can judge of such difficult matters?

The subject of exercise, though strictly speaking, a physical remedy, and one of great importance in this class of disorders, especially in

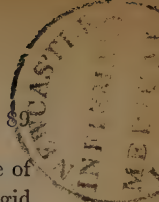
* The disease termed chorea, or St. Vitus's dance, is generally admitted as dependent on irritation of the *primæ viæ*, and hence the practice of Dr. Hamilton, which consisted almost entirely in purgation. But experience has now shewn that this plan will not always, perhaps not generally succeed. By it, we clear away irritating matters, it is true; but the morbid sensibility remains, and our work is only half done. Hence the superior success which has attended the practice of following up the purgative plan by bitters and tonics. The former (purgation) removes the irritants—the latter (bitters and tonics) the susceptibility to the action of future irritants.

In those distressing complaints, which shew themselves by *periodical* pains about the head, face, or other parts of the body, and which appear to be grades of *TIC DOULOUREUX*, or intermittent irritations, a combination of quinine, carbonate of iron, and Fowler's solution, will often conquer the disease, when either or all of these medicines fail separately. Of this fact I have seen some very strong proofs, even since the first edition of this Essay was published.

hypochondriasis, will be glanced at presently under the head of moral remedies, with which it is usually associated. The shower-bath is a remedy during convalescence from stomach-affection, which produces powerful effects when properly managed. It should be commenced with caution, and the temperature of the water gradually reduced, till it comes to that of the atmosphere at the time. The tonic effects of the shower-bath are communicated to the stomach, but, like tonics internally, it is not to be used till morbid sensibility is subdued by diet and medicine. It may then be employed as a powerful preservative from relapses, provided regimen be attended to at the same time. The best time for using it is in the forenoon.

As to the host of symptomatic affections of different parts of the body, originating in disordered conditions of the digestive organs, it is unnecessary to dwell on their treatment in this place. While they are *merely sympathetic* (as they generally are), they require no other method of cure than that which is necessary for the removal of the disorder on which they depend—and when they become organic affections, and independent of the cause which first produced them, their treatment will not differ from that employed for original or idiopathic affections of the same organs or parts. The symptomatic disease of the lungs will be fully considered in the second part of this Essay, and I shall, therefore, only glance at some of the others.

The palpitation, or irregular action of the heart, which so often attends disorder of the stomach, is the most alarming of all. Head-ache, giddiness, noise in the ears, pains over the eye-brows, confusion of thought, defect of memory, and other symptoms about the head, are known, even to a proverb, to depend so often on the state of the stomach, that their existence seldom occasions much anxiety in either patient or practitioner; but when the pulse begins to intermit, and the heart to beat irregularly against the ribs, great danger is usually apprehended by the invalid; and the medical practitioner, who is not well versed in this class of complaints, and accustomed to the use of the stethoscope, is not unfrequently thrown off his guard, and forms a far more melancholy prognosis than the case generally deserves. In these symptomatic affections of the organ of the circulation, however irregular may be the action of the heart and the pulse, they are not accompanied by the other usual attendants on organic disease. The breathing is but little disturbed—the countenance has not the look of distress—the lips are not blue—there is no cedema of the limbs—and the irregular action subsides when the stomach and bowels are empty, and the mind of the patient tranquil. But, as the surest proof of sympathetic disorder, the examination of the heart by the stethoscope, in the intervals, will shew



that there is no enlargement, valvular imperfection, or other change of structure present. In such instances, by confining the patient to a rigid diet for a day or two, and gently clearing the bowels, it may be proved to his own satisfaction that there is no disease, nor even permanent disorder of function in the case. It is quite useless to prescribe any medicine for such sympathetic affection—" *sublatá causá tollitur effectus.*"*

The sympathetic disorders about the kidneys, bladder, urethra, and rectum, are far more puzzling, and difficult to ascertain. Strictures of the rectum and urethra will sometimes be so completely imitated in disordered states of the digestive organs, that both the urine and fæces will be expelled with considerable pain and difficulty—the *former* in a small twisted stream—the *latter* in flattened and spiral cylinders of very diminutive calibre—while both passages will resolutely resist the introduction of a bougie, thereby confirming the inexperienced practitioner in the belief of permanent organic stricture. It is very common in these cases for patients to complain, not only of irritation in making water, but of a sense of pain and smarting in the rectum for some minutes after each discharge of urine. The bladder, too, will often be so irritable, that not more than half a pint of water can be retained. This last will generally deposit a sediment, when cold, unless there be much nervous irritability of the mind, when it will be as pale as distilled water. When these symptoms are present, the prognosis should be suspended till the disorder of the digestive organs is removed, or mitigated, as there can be no hurry for the treatment of stricture, even if it be actually of an organic nature. In nine cases out of ten, these symptoms about the two passages will subside, *pari passu*, with the disorder that produced them. In fact, where there is real permanent stricture of either of the canals, there is seldom half so much inconvenience felt, as where the stricture is temporary and sympathetic.—Such cases afford a fine harvest for the unprincipled Charlatan, who has little difficulty in persuading the patient that he labours under a disease requiring constant mechanical treatment. This treatment not unfrequently produces the very disease which it is pretended to remove, by the officious interference of bougies, without proper attention to the constitutional disorder on which it depends. In what way, except through the inscrutable channel of morbid sympathy, these affections of the kidneys, bladder, rectum, and urethra, are produced, it is difficult to say—but it is

* I would advise the practitioner, however, not to treat these affections of the circulation too lightly, or to set them down as merely sympathetic, without careful examination of the chest by the stethoscope. I daily see serious mistakes of this kind made.—10th Edition.

not improbable that the acrimonious secretions themselves may contribute much to the setting up of these local irritations, imitating organic diseases of the parts thus irritated.

SECT. XIII.---MORAL REMEDIES.

THE *moral* causes of indigestion and hypochondriasis are very numerous, but not so the remedies. The physician sees and deplores the operation of these causes, but he can do little more than combat their *physical* effects, and thus prevent, as much as possible, their re-action on the mind, through the medium of which they were first directed to certain organs of the body. What power can he exert over the thousand sources of mental anguish, resulting from disappointed ambition, blighted hopes, ruined prospects, reverses of fortune, mercantile losses, domestic afflictions, crosses in love, and all the varied ills to which the spirit as well as the flesh is heir? None have such opportunities of observing the devastations committed on the body by the workings of the mind, as the medical philosopher. None can see the intimate connexion between mind and matter so clearly as he can. If metaphysicians had been physicians, they would not have issued into the world so many absurd speculations on the nature of the mental faculties, which they descant upon as independent of the corporeal organs through which they are manifested. Be this as it may, we find that men, labouring under moral afflictions, especially if attended with any corporeal disorder, derive but little benefit from the moral lectures of the philosopher, or even the divine, on the virtues of patience, resignation, and calm submission to the dispensations of Providence, and vicissitudes of fortune!—TIME, it is true, effects a mitigation of our sorrows, and the mind, like the body, becomes accustomed to painful impressions, and ceases, at length, to feel them with much poignancy. But as certain conditions of our corporeal functions greatly aggravate the mental affliction; so other and opposite conditions of the same functions do more to fortify the mind than all the lectures of the moralist, the philosopher, or the divine. At all events, the physician can only work through physical agency, leaving to others the pleasing task of curing the wounds of our spiritual nature by the balm of friendship and the consolations of religion.

SECT. XIV.---TRAVELLING-EXERCISE; OR CHANGE OF AIR AND SCENE.

It is well known that one impression, whether mental or corporeal, will often supersede, or at least weaken another. This principle is sometimes available in the cure of dyspepsia and hypochondriasis, especially when resulting from moral causes. If the patient's circumstances will permit him to engage in any pursuit that can occupy his attention and exercise his body, it will prove one of the most powerful means of counteracting the original cause, as well as of removing its effects. Unfortunately there are but few, comparatively speaking, whose circumstances will permit of the embarkation in any new pursuit. Yet it is in the power of a great many to engage in a systematic exercise of the body in some mode or other, if they will only summon resolution to make the experiment. The languor and listlessness attendant on the disorder are great obstacles to this plan; but they should be urged to it by all the eloquence of their medical attendants. Some caution, however, is necessary here. The debility and exhaustion which supervene on the most trifling exertion deter most people from persevering, and, therefore, the corporeal exercise must be commenced on the lowest possible scale, and very gradually increased. Thus, a person whose sedentary occupations confine him to the house, might begin by going once to the top of the stairs the first day, twice the second day, and so on, till he could go up and down the same path many times each day. It is wonderful what may be accomplished in this way by perseverance. I have known people who could not go up a flight of steps without palpitation and breathlessness, acquire, in one month, the power of running up to the top of the house, with scarcely any acceleration of the pulse or respiration. If this kind of ascending and descending exertion, however, is feared, the individual may adopt the plan recommended by Mr. Abernethy, of walking to and fro in the room with the windows open. If the exercise can be taken in the open air, it will be still better, and the quantum may be gradually increased by twenty or thirty steps daily. This task, which should be represented as an infallible remedy in the end, must be performed at first when the stomach is nearly empty; and when an increase of muscular power is acquired, it may be performed at any time—even within two hours after dinner. Those who can engage in any of the lighter gymnastic exercises, should be urged to it by every kind of persuasion, especially in the cool seasons of the year.*

* I cannot too strongly impress on the minds of parents the necessity of *gymnastic*

These are means within the reach of almost all—and the advantages to be derived from such a system are incalculable. By this systematic exertion of the body, with spare diet, most cases of dyspepsia might be completely cured among the middling and lower classes of society.*

But there is a large class whose *morale* has been too far spoiled—whose education has been too refined—and whose senses have been too much pampered, to benefit by such simple means. There must be some incentive to corporeal exertion stronger than the foregoing plan presents; and moral excitement must be combined with physical agency, if we hope to carry our projects into beneficial operation. That the long catalogue of dyspeptic and hypochondriacal complaints is much more frequently the inheritance of the affluent than the indigent, there can be no doubt; and yet the former class have a remedy in their power which is infinitely more efficacious than all the other moral and physical means put together, but which they rarely take advantage of—or, when they do embrace it, they seldom go the proper way to work. This is TRAVELLING in the open air.

Since the Continent has been open to the English, there has been no lack of this species of exercise; but there are different kinds of travelling now, as there were different kinds of travellers in the days of Sterne. It is one thing to travel for health, and quite another thing to travel for the sake of studying architectural ruins, viewing pictures, ransacking libraries, collecting antiquities, exploring geological formations, or col-

exercises. Those who, from false or fashionable ideas, neglect to give their children the physical advantages which result from this *education* of the corporeal powers, are answerable for more than half the bodily ills which befall their offspring in after-life. And if they recollect that the energies of *mind* are mainly dependent on health of *body*, they may probably perceive the moral as well as the physical advantages of gymnastics. At the same time, I must observe, that gymnastic *enthusiasts*, like all other enthusiasts, carry corporeal exercise to an extreme, and have injured the cause. I have developed my ideas more fully on this subject in the 15th Number of the *Medico-Chirurgical Review*, Jan. 1828.—*Tenth Edition.*

* It is very doubtful which is the more salutary *kind* of exercise—pedestrian or equestrian. I am inclined to agree with Dr. Parry, in giving the preference to the former, as the more natural of the two. But as weakly persons will be induced to ride who would not walk, the horse-exercise is one of our most valuable remedies in dyspepsy, as well as in many other diseases. If the individual, however, could be enticed to commence, and gradually increase, the active or pedestrian species of exercise, it would certainly be far more efficacious in the removal of indigestion and hypochondriacism than the passive, or comparatively passive, exercise of riding. There are some complaints, however, as of the heart and lungs, where passive is safer than active exercise, on account of the temporary excitement of the circulation and respiration occasioned by the latter.

lecting rare and beautiful specimens of plants. It is entirely with the first kind of travelling that I have to do—namely, that mode which conduces most to the restoration of health, leaving every other consideration entirely out of the question, with the exception of *amusement*, which I consider as essentially connected with the subject of health. In the course of a wandering life (over almost every part of the globe), I have had many opportunities of studying and ascertaining the effects of travelling on different diseases; but, on four different occasions within the last fourteen years, I made one of parties, whose sole object was the trial of a plan which I had devised for recruiting health. It may not be wholly uninteresting to those whom it may concern, if I preface the observations which I have to offer on the effects of travelling, by a concise sketch of the plans which were pursued in these instances.

FIRST TOUR OF HEALTH, IN 1823.

[*France, Switzerland, Germany, and Belgium.*]

Six individuals, three in health (domestics) and three valetudinarians (one a lady), travelled, in the months of August, September, and October, 1823, about 2500 miles, through France, Switzerland, Germany, and Belgium, for the sole purpose of *HEALTH*, and such amusement as was considered most contributive to the attainment of that object.

The experiment was tried, whether a constant change of scene and air, combined with almost uninterrupted exercise, active and passive, during the day—principally in the open air, might not ensure a greater stock of health, than slow journeys and long sojourns on the road. The result will be seen presently. But, in order to give the reader some idea of what may be done in a three months' tour of this kind, I shall enumerate the daily journeys, omitting the excursions from and around those places at which we halted for the night, or for a few days. Our longest sojourn was that of a week, and that only thrice—at Paris, Geneva, and Brussels. In a majority of places, we only stopped a night and part of a day, or one or two days, according to local interest. But I may remark that, as far as I was concerned, more exercise was taken during the days of sojourn at each place, than during the days occupied in travelling from one point to another. The consequence was, that a quarter of a year was spent in one uninterrupted system of exercise, change of air, and change of scene, together with the mental excitement and amusement produced by the perpetual presentation of new objects—many of them the most interesting on the face of this globe.

The following were the regular journeys, and the points of nightly

repose:—1, Sittingbourn—2, Dover—3, Calais—4, Boulogne—5, Abbeville—6, Rouen—7, Along the banks of the Seine to Mantes—8, Paris, with various excursions and perambulations—9, Fontainbleau—10, Auxerre—11, Vitteaux—12, Dijon, with excursions—13, Champagnole, in the Jura Mountains—14, Geneva, with various excursions—15, Salenche—16, Chamouni, with various excursions to the Mer de Glace, Jardin, Buet, &c.—17, Across the Col de Balme to Martigny, with excursions up the Vallais—18, By the Valley of Entremont, &c. to the Great St. Bernard, with excursions—19, Back to Martigny—20, Evian, on the Lake of Geneva, with excursions—21, Geneva—22, Lausanne, with excursions—23, La Sarna—24, Neuf-Chatel—25, Berne, with excursions and perambulations—26, Thoun—27, Valley of Lauterbrunnen, with various circuits—28, Grindenwalde, with excursions to the Glaciers, &c.—29, Over the Grand Scheidec to Meyrenge, with excursions to Waterfalls, &c.—30, By Brienz, Lake of Brienz, Interlaken, and Lake of Thoun, with various excursions, to the Giesbach and other waterfalls, back to Thoun—31, Berne—32, Zoffengen—33, Lucerne, with various excursions—34, Zoug and Zurich—35, Chaufhausen and Falls of the Rhine—36, Neustad, in the Black Forest—37, By the Vallé d'Enfer to Offenburgh—38, Carlshue, with excursions—39, Heidelberg—40, Darmstadd—41, Frankfort on the Maine, with excursions—42, Mayence, with excursions—43, Coblenz, Bingen, Bonn, &c.—44, Cologne—45, Aix la Chapelle, with excursions—46, Liege—47, Brussels, with a week's excursions—48, Ghent and Courtray—49, Dunkirk—50, Calais—51, Dover—52, London.

Thus, there were 52 regular journeys during the tour, and 32 days spent in excursions and perambulations. And as there never was so much exercise or fatigue during the journeys, as during the days of sojourn and excursions, it follows that the whole of this tour might be made with great ease, and the utmost advantage to health, in two months. As far as natural scenery is concerned, it would, perhaps, be difficult to select a tract, which could offer such a succession of the most beautiful and sublime views, and such a variety of interesting objects, as the line which the above route presents. It would be better, however, to dedicate three months to the tour, if the time and other circumstances permitted, than to make it in two months; though, if only two months could be spared, I would recommend the same line of travel, where health was the object. Perhaps it would be better, however, to reverse the order of the route, and to commence with the Rhine, by which plan the majesty of the scenery would be gradually and progressively increasing, till the traveller reached the summit of the Great St. Bernard, or Mont Blanc.

The foregoing circuit was made, as far as the writer is concerned, entirely in the open air; that is to say, in an open-carriage—in char-à-bancs—on mules—and on foot. The exercise was always a combination or quick succession of the active and passive kinds, as advantage was always taken of hills and mountains, on the regular journeys to get down and walk—while a great part of each excursion was pedestrian, with the char-à-banc or mule at hand, when fatigue was experienced.* This plan possesses many advantages for the invalid, over the purely active or purely passive modes of travelling. The constant alternation of the two secures the benefits of both, without the inconvenience of either. As the season for travelling in Switzerland is the hottest of the year, and as, in the valleys, the temperature is excessive, so, great danger would be incurred by the invalid's attempting pedestrian exercise in the middle of the day. But by travelling passively in the hot valleys, and walking whenever the temperature is moderate or the ground elevated, he derives all the advantage which exercise of both kinds can possibly confer, without any risk to his health.

The journeys on this tour varied from 20 to 50 or 60 miles in the day, and were always concluded by sunset—often much before that period. The usual routine of meals was, some coffee at sunrise, and then exercise, either in perambulations, excursions, or on the first stage of the day's journey. At noon, a *dejeuné à la fourchette*, and then immediately to exercise or to travel; concluding the journey and the exercise of the day by dinner at 8 o'clock at the table-d'hôte, where a company of all nations, varying from 10 to 50 or 60 people, were sure to assemble, with appetites of tigers rather than of men. By ten, or half-past ten, all were in bed, and there was seldom a waking interval from that time till six in the morning, the punctual hour of rising.

In this circuit, we experienced great and sometimes very abrupt vicissitudes of temperature, as well as other atmospheric changes; but, as will be presently seen, without any bad consequences.—Before I give any exposition of the moral and physical effects of this kind of exercise, I may be permitted to premise, that I made it one of my principal studies, during the whole course of the tour, not only to investigate its physiological effects on my own person and those of the party (six in number), but to make constant enquiries among the numerous and often intelligent travellers with whom I journed or sojourned on the road. Many of these were invalids—many affected with actual diseases—a

* The writer of this has little hesitation in averring, that he walked full half of the whole distance which was traversed in this tour; that is, that in a quarter of a year he walked twelve or thirteen hundred miles.

considerable proportion had had dyspeptic complaints previously—and all were capable of describing the influence of travelling-exercise on their mental and corporeal functions. What I am going to say in the sequel, on this subject, therefore, is the result of direct personal experience and observation, in Europe, and in almost every quarter of the globe, unbiassed by any preconceived opinions derived from books or men. I am not without hope that my observations will be of some service to the physician as well as to the invalid, by putting them in possession of facts, which cannot be ascertained under any other conditions than those under which they were investigated in the present instance, or under similar circumstances.

SECOND TOUR,

Through France, Switzerland, and Italy, in September, October, November, and December, 1829.

1, Dover—2, Calais—3, Montreuil—4, Granvilliers—5, Paris, (with excursions)—6, Fontainebleau—7, Joigny—8, Montarbe—9, Dijon—10, Auxonne—11, St. Laurent—12, Geneva, (with excursions)—13, Vevey, (by Lausanne)—14, Martigny—15, Tourtemagne, in the Vallais—16, Village of the Simplon—17, Baveno, on the Lago Maggiore, with excursions to the Islands, &c.—18, Sesto Calende, on the Ticino—19, Milan, with excursions and perambulations—20, To the banks of the Po opposite Piacenza, and back to Milan, the bridge being broken down—21, Pavia, with perambulations—22, Piacenza—23, Bologna (through Parma and Modena), with excursions and perambulations—24, Caviliajo on the Appenines—25, Florence, with excursions and perambulations—26, Sienna—27, Radicofani—28, Viterbo—29, ROME, with various perambulations and excursions—30, Velletri—31, Mola di Gaeta—32, NAPLES, with various perambulations, and excursions to Pompeii, Herculaneum, &c. &c.—33, Terracina—34, Rome—35, Aquapendente—36, Florence—37, Impoli—38, Pisa, with excursions—39, Sarzana—40, Sistri on the Mediterranean shore—41, GENOA, with perambulations—42, Finale—43, St. Remo—44, NICE, with perambulations—45, Antibes—46, 47, 48, 49, to Lyons, (day and night by the Diligence)—50, by water to Chalons—51, 2, 3, 4, to PARIS, by Diligence—55, 56, Calais—57, Dover—58, LONDON.

In this second tour, then, there were 58 days spent in regular journeys, and about 40 days in perambulations. The space traversed in this tour, amounted to about 3500 miles, and, with the exception of eight or ten days, it was entirely in the open air, and a considerable

proportion of it pedestrian, especially in mountainous parts. As compared with the former tour, I would say, that Switzerland and Germany are more conducive to the health of the body—Italy to the pleasures, or at least the excitement of the mind. In other words, I would say that the first tour is more adapted for the *Invalid*—the second, for a person in a considerable degree of health. The Italian excursion, in fact, was undertaken rather as a relaxation, from the “WEAR and TEAR” of Modern Babylon, than as a means of restoring lost health. The renovation, however, of physical energies, was not less apparent nor real on this, than on the former tour. I may be permitted to instance a few incidents illustrating the immunity which this kind of exercise confers on travellers when exposed to vicissitudes of climate, and malarious impressions.

The transition from the valley of the Rhone to the summit of the Simplon, is not inconsiderable. We slept one night at TOURTEMAGNE, in the Vallais, and found it very sultry. The next night we slept in the dreary *Hôtel de la Poste*, in the village of the Simplon, among snow and ice, without the least inconvenience, much less detriment. It is in Italy, however, that the transitions of temperature, and other atmospheric alternations are most severely felt, especially by invalids who are incapable of taking strong exercise, or who dare not expose themselves freely to the open air in all weathers.

The change of climate from Bologna to the summit of the Apennines, though not so abrupt as that from Sion to the village of the Simplon, is perhaps more trying to the constitution. It was exceedingly hot all the way up the Apennines, and night as well as a storm overtook us before we got to our solitary inn at CAVILIAJO—“the scene of one of those deep-laid confederacies for plunder and assassination, of which Italy has always been a prolific theatre.”* Notwithstanding the tales of banditti and the pelting of the storm, we slept securely, and started at day-light next morning to pursue our journey down to the romantic VAL D'ARNO, and that without catching either cold or rheumatism.

But although regular exercise fortifies us much against atmospheric transitions or even malaria; yet, if carried to fatigue, it has rather a contrary effect. An instance may not be uninteresting, especially to travellers. I shall transcribe it from my notes on this tour. Having arrived at Sienna, about two hours before night, and having only that time to see the place, I jumped from the carriage, without taking any

* Rome in the 19th Century.

note of the hotel where we stopped, and wandered, as was my custom, through all parts of the city, till long after it was dark. At length fatigue, cold, and hunger, reminded me of their antidotes; but not knowing the name either of the street or the hotel where we had halted, I was forced to wander about full another hour before I was able to rejoin my companions. I should not have mentioned this trifling incident, were it not on account of what followed, and which often follows *fatigue and exposure to night air in Italy*.

We started at day-break, and, as the sun rose, and indeed for two hours afterwards, the whole country presented the appearance of a placid lake, studded with small islands, each crowned with a town, village, convent, or castle. This phenomenon is occasioned by a dense fog, which covers the valleys, and looks like a sheet of water, leaving the tops of the hills free, and on which almost the whole of the towns, villages, &c. are built. The air was remarkably raw—and, about half-way between Sienna and Buono Convento (a road where *malaria* notoriously prevails), I experienced the premonitory horrors of an ague-fit, and the first, or cold stage of the “foul fiend.” The fatigue and exhaustion of the preceding evening had doubtless predisposed me to this attack; and those who have felt the horrible depression of spirits attendant on an attack of malaria fever, can appreciate the feelings which rushed across my mind, under the expectancy of being laid up on the dreary mountain of RADICOFANI, with some serious or fatal malady! Fortunately the day became very hot—I walked up two or three of the steep mountains on this road—passed at once from the stage of shivering to that of perspiration—and baulked the malaria of Buono Convento. The ascent to Radicofani is five tedious Italian miles. The evening was setting in, as we dragged our weary way up the mountain—the cold was intense—the scenery was that of desolation and despair. So loud did the Tramontane winds howl through every chink and chamber of the dreary caravansera on this mountain, that I could not help regretting the removal of old Vulcan’s smithery from a place where a blast of his forge would be so rich a treat to the shivering traveller.

The narrow escape from malaria fever, to which I was predisposed by the fatigue above-mentioned, was entirely forgotten the next day, on entering the holy territory of the Pope—surveying the romantic scenery about Aquapendente, the Lake of Bolsena, Montefiascone, and Viterbo, which was the next night’s place of repose.

It is not, perhaps, in the northern, the Alpine, and the Apennine portions of fair Italy that atmospherical transitions are so trying, as in the apparently more favoured regions of that fairy land—for instance,

about Naples. There the Tramontanes, alternating with the Sirocco, produce the most remarkable effects on the human constitution. It might be said without much exaggeration, that in Italy almost every breeze comes over a volcano or an iceberg—and, consequently, we are alternately scorched by the one and frozen by the other! I shall ever remember the debilitating—almost annihilating effects of a SIROCCO at Naples. It was far worse than the hot land-winds at Madras or Vizagapatam in the month of May! On the coast of Coromandel, the land-winds are dry, however hot; but the Sirocco, as it sweeps over the Mediterranean from the burning sands of Africa, saturates itself with aqueous vapour, and is then poured in *boiling steam* on the shores of Italy. The depressing effects of this Sirocco are indescribable. After dragging my weary limbs through all the streets of Naples, during a whole day of this furnace-blast from Lybia, I started at daylight next morning for Pompeii, and that under a most piercing blast of the Tramontane. Yet no injury was sustained by a day's exposure to the chilling blast—on account of the seasoning produced by nine or ten weeks of previous, and almost perpetual motion in the open air.

The consciousness of security against atmospherical transitions and malarious impressions, has often led me to do, in travelling, what I should be very sorry to do under other circumstances—and which, indeed, would not be very wise under any circumstances. Take the following for an example.

We started from Terracina, a little before sunset, in a carriage very badly calculated for four, but compelled by the villainous courier of the Pope (for which I hope he has never received absolution) to hold an additional passenger, in the shape (if shape he had) of his own pot-bellied son, besides baggage and luggage enough to load a caravan. Nothing but the philosophy of observing the Pontine Marshes at night, could have induced me to bear, with any degree of patience, the infernal breath of the father and his urchin, between whom I voluntarily placed myself to give two invalid companions all the accommodation which their health and sufferings required. But patience has its bounds, and at the end of the first stage I got on the outside of the coach, rather to breathe the deleterious gases emitted from the fens, than inhale the mephitic airs generated within this infernal cauldron. The atmosphere was still as the grave—the moon shone faintly through a halo of fogs—and a dense vapour rose in all directions around us, emitting the most strange and sickly odour which I ever experienced on any part of the earth's surface. Under other and ordinary circumstances, I should have felt some alarm at thus exposing myself to the full influence of nocturnal emanations from the deadly marshes over which we were passing; but

a consciousness of the life which I had led for three months, inspired me with complete contempt for any morbid influence which air or earth could direct against me. I crossed the fens in this philosophic mood, while the courier of St. Peter kept the windows of the coach closely shut against the dangerous malaria of the night. I would not advise others to imitate this rash conduct on my part. Many have paid dearly for their curiosity—and myself among the rest—if not on this, on various other occasions.

——— *Video meliora proboque*
Deteriora sequor !

The greatest trial for the constitution which I encountered on this tour, was on the road between Genoa and Nice, late in the month of November, 1829—a year in which the cold set in unusually early, and with uncommon rigour.

After dinner, at Savona, I rambled down to the harbour; and while I shivered under the chilling Tramontane, I was struck with the peculiar aspect of the sky towards the Alps, and the horizon over the sea. The latter was hazy; but the heavens presented a lurid appearance which betokened something unusual. At this moment, I cast my eye on a column bearing the statue of the Virgin, and on the pedestal read the following couplet:

In mare irato, in subita procella,
Invoco te, MARIA, nostra benigna stella !

While returning to the inn, and repeating these lines, my attention was attracted by a huge female *CHEMISE* hung out at the door of a shop, and which appeared to me of very peculiar construction. It was nearly an inch in thickness, and lined with cotton-wool which seemed to defy the coldest Tramontane that ever descended from the Alps. By some strange association of ideas, I jumbled together in my mind, a “subita procella,” and this comfortable chemise, as a “benigna stella,” that might be as useful in a snow-storm on the Alps, as the Virgin herself in a tempest on the ocean. I instantly purchased the chemise—and I am very certain that, to this article of female dress, I owe the preservation of my life. At the inn I amused myself for half an hour, in getting into this same chemise, though I had immense difficulty in compelling my clothes to button over it. When I summoned the waiter to pay my bill, the man stared at my sudden increase of size, and cast an enquiring glance at a bed that was in the room, evidently suspecting that I had made free with the blankets! I soon convinced him that I was possessed of nothing but my own property—and away we trotted for *FINALE*, where we arrived rather late. I could only see that this town lay at the foot of a

very steep mountain, over whose bluff promontory, over-hanging the waves, we were to pass in the morning before day-light. At the *HÔTEL DE LA CHINE* I fell in with an old fellow-traveller, a Polytechnic student, (travelling en voiturier) and we supped together very comfortably by a blazing fire. I was awake several times in the night by strange noises, as if all the doors and window-shutters in *FINALE* were in motion; and at four o'clock in the morning, when roused for a long journey to *ST. REMO*, I perceived that sleet was falling, and that a high wind prevailed.

The cold was severe, and the night, or rather morning, was dark as pitch. I took care to wrap myself in all the warm clothing I possessed, not forgetting the "*BENIGNA STELLA*" of the *SAVONA VIRGIN*, with something like a presentiment of impending danger—a depression of spirits not unfrequently felt at the approach of a storm. As we slowly ascended the zig-zag path of the mountain, the wind increased in violence, and the sleet penetrated every crevice of our clothes. By the time we had got nearly to the summit, it blew a hurricane; and, the ground becoming covered with snow, all distinct trace of the road was soon lost! We heard the Mediterranean roaring beneath us, on our left, and saw the sheets of white foam sweeping along the shore—while stupendous rocks towered over our heads on the right—and we could perceive that we were winding along the brink of a horrible precipice, on a path not more than eleven or twelve feet in breadth, and apparently without any parapet! The *NIZZARD*, who, all along, carefully led the horse, now made a full stop, and crossing himself, muttered some exclamation, or perhaps a prayer, which I could not distinctly hear or understand. After a few seconds of painful suspense, he acknowledged that he was afraid of proceeding, and, thought we had better try to get back to *FINALE*. But the road was so narrow, that two carriages of any kind, could not pass, except at particular places where niches were hollowed out of the rock for this purpose. I then dismounted, and found, to my surprise and dismay, that my limbs were so benumbed, that I could scarcely support myself! He attempted to turn the *carri-cello*; but experienced great difficulty, as well as some danger, in this operation. And when, at last, he effected it, he soon became convinced that it was utterly impossible to make head against the storm of wind, sleet, and snow, which poured along this defile, in a direction contrary to our retreat! In the whole course of my life, I never experienced such sensations of cold. The *tramontane* blast came down from the Alps, so voracious of caloric, that it sucked the vital heat from every pore of my body! Here we lingered for full an hour, unable to get back, and fearing to proceed forward. We repeatedly heard fragments

of rock detached from the precipices above us by the hurricane, crashing from steep to steep, and rolling into the sea beneath—and we expected, every instant, to be buried under a torrent of stones, or swept down into the roaring waves. Among the agonising thoughts that rushed across my mind, in this perilous situation, the inscription on the pedestal of the Virgin's statue at Savona, recurred to my memory; and, as the mental energies are often enfeebled by danger, doubt, and bodily fatigue, the very name of the place we had left—*FINALE*—suggested the superstitious and unmanly presentiment that this mountain-pass and this snow-storm were destined to be the last scene of my mortal career! I now regretted, when too late, that curiosity had led me along this road at so advanced a period of the season, and in so hurried a manner—and, while shivering on this Alpine promontory, exposed to the freezing blast, and other dangers still more imminent, the thought of “friends and distant home,” recalled to mind the picture which Thompson drew of a man perishing in a snow-storm—a recollection which added the misery of reminiscence to the peril and poignancy of present sufferings! The hour which passed in this situation, before the day glimmered upon us, appeared to be an age—and here I became convinced that the article of clothing which I purchased at SAVONA, was mainly instrumental in preserving my life. This sudden reflection threw a gleam of hope over the dreary scene, long before the beams of the sun illumined our path; and a *superstitious* emotion contributed to revive my drooping spirits, as it had previously tended to depress them.

When I say that the additional article of dress proved a preservative of life on this trying occasion, I am aware that nothing would have been effectual, had I not been inured to atmospherical vicissitudes by three months' travelling in the open air previously. Yet as—

Whatever link we strike,

Tenth or ten-thousandth, breaks the chain alike;—

so I am deeply impressed with the conviction that, to the VIRGIN of SAVONA or to her holy CHEMISE, I owe my salvation on the mountain of FINALE. On my arrival at Nice, I found a courier laid up with dangerous, if not fatal inflammation of the lungs, from exposure to the same storm on the same mountain.

At length the dawn appeared, though the hurricane continued with unabated violence, and the Mediterranean was one immense sheet of foam. The poor Nizzard, who was almost as lifeless as myself, assisted me into the carricello, and we cautiously pursued our journey.* The

* When the sun rose, we perceived the whole country, in every direction, covered with snow.

exhaustion and terror of this morning induced such an irresistible propensity to sleep, that it was with the greatest difficulty I could keep myself from falling into a fatal lethargy, till we got to a village beyond the mountain, where coffee and a blazing fire recruited our exhausted frames. But during the whole of that day, I felt that I was on the verge of a serious illness—and it was not till after a good night's sleep at St. Remo, that I shook off the effects of the most terrible exposure and imminent danger which I had ever before encountered.

The journey through France, from Antibes to Calais, was one continued scene of snow, ice, and sleet—and yet, coming from the warm skies of Italy, I never caught even a common cold between Naples and London.*

THIRD TOUR.

Home Circuit, 1832.

1, 2, 3, The steamer to Edinburgh—4, Newhaven to Stirling, by steam—5, Callander—6, The Trosacks—7, Loch Katrine, Loch Lomond, Dumbarton—8, Greenoch—9, By the Kyles of Bute to East Tarbet, (excursion by the Crinan Canal, to the Corrivrechan, &c. &c.)—10, Inverary, (with excursion)—11, Dalmally—12, By Loch Awe to Oban—13, To Tobemorey—14, Staffa, Iona, Oban—15, Dunstaffnage, Glen-etive Ballahulish—16, By the valley of Glencoe, Black Moor, &c. to Tyndrum—17, Tyndrum to Killin—18, Kenmore, by Loch Tay—19, Dunkeld—20, Killiecrankie—21, Inverness, with various excursions to Kraig Phædrick, &c.—22, Caledonian Canal—Fall of Fyers, &c.—23, Fort William—24, Oban—25, Inverary, across Loch Awe—26, Oban to Loch-Lomond—27, Grencroe—28, Glasgow—29, Ailsa, (excursion—30, Lanark, Falls of the Clyde—31, Gretna Green—32, Carlisle—32, 33, 34, English Lakes—35, 36, Liverpool—37, Manchester—Rail-roads—38, Birmingham—39, 40, 41, Leamington—Kennilworth, &c.—42, Cheltenham, with excursions, &c.—43, London.

Thus this highland excursion occupied 43 days of travelling, and about 28 days of sojourn or excursions. Two delicate females accompanied me, and were exposed, on various occasions, to great inclemencies of weather, vicissitudes of temperature, rough fare, sometimes to wet beds, and, during the whole tour, to the epidemic cholera. But the constant exercise in the open air set at nought all diseases and all

* See "CHANGE OF AIR, or the Pursuit of Health," lately published by the Author.—4th Edition.

the causes of disease. The travellers came back to Modern Babylon, in prime health, and without ever thinking of bodily disorder.* Exercise, and especially travelling exercise in the open air, effects for our constitutions what Mackintosh does for our cloaks—it renders them airtight and water-proof. And here I would offer a piece of advice to some of my countrymen and countrywomen, who spend a great deal of time and money in the neighbourhood of Cavendish Square and Dover Street, swallowing large quantities of peptic precepts and blue-pill, under Drs. A. B. C. &c.—a class of people who contrive to imagine real ills till, at length, they realize imaginary ones;—the advice is, to go to the Highland mountains, for change of complexion as well as change of air. They will there find water enough to “raze out the written troubles of the brain”—and air enough to disperse the “green and yellow melancholy” that hangs upon their countenances—and exercise sufficient to transform their spermaceti muscles into something like youthful and elastic fibre. Let these victims of morbid sensibility—perhaps of morbid fancy, traverse the Highland mountains for a couple of months, and they will learn to prefer oat-cake to calomel, whiskey to senna draughts, and grouse to gruel.

FOURTH TOUR OF HEALTH, 1834.

[*Holland—Germany—Switzerland—Italy, &c.*]

Nights of repose. 1, The Batavier steamer—2, Rotterdam—3, Leyden—4, Amsterdam—5, Utrecht—6, Rotterdam—7, Nymeguen—8, On the Rhine—9, Cologne—10, Coblentz—11, Mayence—12, Carlsruhe—13, Baden-Baden—14, Offenburgh—15, Villengen—16, Schaffhausen—17, Zurich—18, Rapperschyll—19, By the Lake of Wallenstadt, to Sargans—20, Pfeffers—21, Coire—22, Village of the Splugen, by the VIA MALA—23, Chiavenna, by the Pass of the Splugen—24, Round the Lake of Como, in the steamer, to Como—25, By the Lake of Lugano, to the town of Lugano (dreadful storm, 27th August, and detained seven hours at the edge of the Lake)—26, Bellinzona—27, Attempt to ascend the St. Gothard, but the bridges destroyed, and obliged to return back to Bellinzona—28, Luvino, on the Lago Maggiore, among a den of rogues and bandits, who plundered and cheated us—29, Across the Lago Maggiore, to ascend the Simplon, which was destroyed in various places—30, Novarra, in Savoy—31, Chiavassa—32, Turin—33, Suza,

* Vide the RECESS, or Autumnal Relaxation in the Highlands and Lowlands. By JAMES JOHNSON, M.D. Octavo. Highley, Fleet Street.

at the foot of the Mont Cenis—34, Across the Mont Cenis, on temporary bridges, to Lans le Bourg—35, Grande Maison, in the valley of the Arc—36, Chamberry—37, Frangi—38, Geneva—39, By the Lake to Lausanne—40, Morat—41, Berne—42, Balstall—43, Basle—44, Freyburg—45, Achern—46, By Carlsruhe to Bruchsal—47, Heidelberg—48, Darmstadt—49, Mayence—50, Coblentz—51, The Brunnens—52, Cologne—53, Aix-la-Chapelle—54 and 55, Antwerp—56, At sea—57, London.

In this tour, the same females (besides two other friends) accompanied me. We traversed the plains of Holland, under an intense sun, and inhaling all the pestiferous miasmata that emanate from Dutch dykes and alluvial soils, without inconvenience. We ascended the Rhine, amidst all the hurly-burly of steamers by day, and contention for beds and suppers at night. We passed through the BRUNNENS, throwing their waters to the dogs. We wended through the valleys of Switzerland, and ascended the mighty Alps—sometimes under tropical temperature—sometimes deluged with rain, or frozen with snow—but, at all times, unaffected by these rapid and extensive vicissitudes.

In some recent tours among the Spas of Germany, I have directed my attention to the medicinal effects of those springs in various complaints—and indigestion among the rest. The details are given in a small work, "THE SPA TOURIST," to which I must refer the reader. But I may here introduce a few remarks on the use of warm baths in this country.

It is clear that there are many complaints to which warm baths might prove injurious. In pulmonary affections of all kinds, warm baths are more than doubtful—they are generally prejudicial. The afflux of blood to the surface, while in the bath, must be followed by more or less of efflux from the periphery to the centre of the body—and then the weak organ will experience more injury than benefit from the operation. Besides this, there is a certain degree of re-action that follows all baths, both hot and cold—and this re-action or excitement almost always aggravates the symptoms of chronic inflammation, or organic disease of internal structures. Chronic hepatitis may form an exception sometimes. The excitement of the *tepid* bath on the skin generally increases the secretion of bile, and in that way relieves a congested liver. But, even here, the bath should never be more than tepid.

The same observations apply to all organic affections of the heart. The tide of the circulation, in such cases, should never be accelerated by either warm or cold bathing.

In determinations (as they are called) to the head—in chronic affections of the membranes, of the vessels, or of the substance of the brain, hot or cold baths are decidedly contra-indicated, and for the reasons already adduced.

And here, I cannot help taking an opportunity of cautioning against a practice by no means uncommon in this country—namely, the employment of warm, and even hot, baths in acute rheumatism. I can safely declare that I never yet saw any good effects from such procedure;—but, on the contrary, that I have very generally observed an augmentation of the fever—or, what is worse, an increased tendency to translation—not merely from joint to joint, but from the surface to some internal organ, especially the heart. I have been long in the habit, while investigating hypertrophy of the heart, succeeding acute rheumatism, to inquire respecting the treatment of the original disease; and I have found that, in more than three-fourths of these cases, the hot bath had been employed to relieve the pains of the limbs. Acute rheumatism is a specific, and not a common inflammation. It is not to be cured by general and local bleeding, like other topical phlegmasiæ. The blood, indeed, will be found highly inflamed; but that does not authorize venesection in this particular case, any more than the same phenomenon would in pregnancy. Acute rheumatism is a very manageable disease if baths are left alone, and calomel and opium given, with colchicum and saline aperients. Venesection may be proper in severe cases. Warm evaporating lotions to the parts inflamed are infinitely better than the leechings and baths.

I doubt the utility of warm baths in acute inflammation of internal structures generally—and in many of them, where they are sometimes employed, I am confident they are detrimental. It is by no means uncommon to place a patient, labouring under acute hepatitis, in a warm bath after bleeding. It is hazardous to employ this measure *before* the inflammation is checked, and it is unnecessary *afterwards*. The same practice is often pursued, and always with risk, in pneumonia and carditis. Nothing would induce me to order the warm-bath in either of these complaints. Inflammations of the peritoneum and of the urinary organs, including of course, the kidneys, are those in which I have observed most benefit, and least danger, from the warm-bath. But even in these, very copious bleeding should precede it—the bowels being well cleared—and the secretions rendered as healthy as possible. There are very few other internal inflammations, where I would venture on the warm-bath.

But there is a long catalogue of chronic disorders, to which THERMAL MEDICINAL WATERS, both internally and externally applied, prove extremely useful—especially when aided by the moral and physical circumstances adverted to in this paper, and which exist, in greater or less abundance, at most of the watering-places, in England and on the Continent. Thermal waters act in three principal ways on the human

machine:—1st, through the medium of *sensation*, on the nervous system—2nd, through the agency of *temperature*, on the vascular system—and 3rd, by means of their chemical contents, on the secretory and excretory organs. In most chronic complaints, and especially in rheumatism, gout, cutaneous defædations, neuralgia, dyspepsia, glandular swellings, and visceral obstructions, there is pain, uneasiness, or discomfort of some kind, which, indeed, constitutes the chief grievance of the individual. It is no unimportant matter to soothe these sufferings, during the process employed for their cure. The warm bath effects this purpose in an eminent degree, through its agency on the sentient extremities of the nerves distributed over the surface of the body. There is an extensive chain of sympathies established between the skin and the internal viscera; and, through the medium of this channel, agreeable sensations excited on the exterior, are very often communicated to the central organs and structures themselves. Even in this way, torpid secretions are frequently roused into activity and improved in quality, while the secretory apparatus itself is relieved from a host of painful feelings.

The agency of thermal waters on the vascular system is of the utmost importance. Although the temperature of the blood is 98° of Fahrenheit, the surface of the body, when not fevered, is very many degrees below that point. The warm-bath, therefore, when about blood-heat, attracts a strong tide of circulation to the surface, and thus liberates internal organs, for a time, from a congestive state of their vessels. This determination to the surface augments the cutaneous exhalation, and, by a well-known reflex sympathy, increases the secretion of the great glandular viscera of the interior—more especially the liver. Even the gentle and alternate flux and reflux of the circulation, from the interior to the exterior, and vice versâ, produce very beneficial effects, in constitutions where the balance of the circulation is broken in a variety of ways, and where several secretions and excretions are vitiated, by stagnation in some cases, and by inordinate action in others.

The chemical agency of mineral waters is not to be overlooked. They contain, in all probability, many ingredients which we cannot detect—and many known agents, which we cannot imitate by artificial combinations. This is proved by every day's observation. Thus, the saline aperient materials, in mineral waters, will produce ten times more effect than the identical materials, artificially dissolved and commixed. The same is true with respect to the chalybeate springs. A grain of iron in them is more tonic than 20 grains, exhibited according to the Pharmacopœia. It is on these accounts, that a course of the saline aperient waters, followed up by the light chalybeates, as at Ems and other places

combined with the various moral and physical auxiliaries which I have described, may and do work wonders in many chronic maladies.

It is, however, in that extensive class of human afflictions termed nervous, dyspeptic, and hypochondriacal, that a journey to the Baths of Germany offers strong temptations, and very considerable hopes of amendment. To hypochondriacs especially I would recommend this tour. Let them get sea-sick in the Batavier, mud-sick in the Maaes, and dyke-sick in Holland; let them then ascend the Rhine, amid all the bustle of steamers and hotels—and wind through the romantic scenery of that noble river. They may visit the Brunnens of Nassau, especially Weisbaden—the clean, dull towns of Darmstadt and Carlsruhe—the old red Castle of Heidelberg—the fairy land of Baden-Baden—the prosperous town of Offenburgh—the Black Forest—the Falls of the Rhine—the Lake of Wallenstadt, presenting the most splendid lake scenery in Switzerland—and, lastly, the BATHS OF PFEFFERS. Let them be enjoined by their physician to penetrate the gorge of the Tamina, and drink and perspire at the source of the waters in the rock, as the *sine qua non* of cure—let them be conjured to mount the GALANDA, where there is a specific AIR for removal of low spirits—and then, if their “BLUE DEVILS” are not drowned in the Pfeffers, or blown away on the Alps—they had better jump into the *Tamina*—for their case is hopeless!

But if they experience, as I think they will, beneficial consequences of the discipline I have recommended, then I would advise them to prosecute their tour of health still farther. They are now in the vicinity of one of the most magnificent of the Alpine passes—the SPLUGEN. In their way thither, they thread the mazes of the VIA MALA, one of the wonders of the world—where they view, with terror, the infant Rhine struggling through gorges little inferior to that of the Tamina—and over which they pass three times, with the river rolling and roaring 300 feet beneath them.* Descending from the sublime and dreary heights of the Splugen, they behold, with delight and wonder, the road winding down to fair Italy, like a serpent coiled along the rugged steepes of the mountain. Traversing the lake of Como in the steamer, they may wander round the romantic shores of Lugano—embark on the Lago Maggiore, and land on the Boromeo Isles—return by the Simplon, St. Bernard, or Mt. Cenis, and penetrate through the centre of Switzerland, back to the Rhine—or across through dull France, to their native shore—ALL IN TWO MONTHS.

* See Dr. Beattie's inimitable delineation of the VIA MALA, in “*Switzerland illustrated*”—a work unequalled for the eloquence of the text, the beauty of the plates, and the fidelity of the descriptions.

We descended from the snowy Alps to the plains of Lombardy, in August, when the heat was excessive, and when malaria issued in abundance, from the fruitful soil of that beautiful country. We slept near RIVA, one of the most pestiferous spots in Italy, where malignant fevers are almost certain to issue from even a single night's repose there—and all without illness.—On the Lake of Lugano, we witnessed one of the most terrific hurricanes that ever swept along the Alps. It destroyed every pass, on the 27th of August, between the Mediterranean and the Tyrol, carrying devastation and ruin along a line of two or three hundred miles, burying whole villages under the masses of rocks and debris of pine forests torn down from the Alps into the valleys, occasioning the loss of more than a thousand lives, and of many millions of property. In crossing rivers, lakes, mountains, and deep ravines, we experienced all imaginable transitions, thermometrical, hygrometrical, and barometrical—without a day's or an hour's sickness! We returned to modern Babylon, more like gypsies than London citizens. We were embrowned in complexion—improved in health—and impressed with a conviction of the beneficial influence of TRAVELLING EXERCISE IN THE OPEN AIR.

1. *Moral Effects.*—If abstraction from the cares and anxieties of life, from the perplexities of business, and, in short, from the operation of those conflicting passions which harass the mind and wear the body, be possible under any circumstances, it is likely to be so on such journeys as these, for which previous arrangements are made, and where a constant succession of new and interesting objects is presented to the eye and understanding, that powerfully arrests the attention and absorbs other feelings, leaving little time for reflections on the past, or gloomy anticipations of the future. To this may be added, the hope of returning health, increased, as it generally will be, by the daily acquisition of that invaluable blessing as we proceed.

One of the first perceptible consequences of this state of things is a greater degree of serenity or evenness of temper, than was previously possessed. There is something in the daily intercourse with strangers, on the road, and at the TABLE-D'HÔTE, which checks irritability of temper. We are not long enough in each other's society to get into argumentation, or those collisions of sentiment which a more familiar acquaintance produces, and too often raises into altercations, and even irascibility, where the mind and body are previously irritable. These short periods of intercourse are the honey-moons of society, where only good humour and politeness prevail. We change our company before we are intimate enough to contradict each other, and thus excite warm blood. Besides, the conversation generally turns on scenes and

subjects with which we are pleased and interested on the road—while political and religious discussions are studiously avoided by all travellers, as if by a tacit but universal compact. One of the best remedies, then, for irritability of temper, is a tour of this kind. A few hundred pounds would be well expended, annually, by many of our rich countrymen, in applying this pleasant remedy to the mind, when soured and unhinged by the struggles after wealth, rank, or power!

I have already portrayed the influence of bad health, and especially of disordered states of the digestive organs, in producing *depression of spirits*, or mental despondency, far worse to bear than corporeal pain. For the removal of this kind of melancholy, there is no other moral or physical remedy of half so much efficacy as a tour conducted on the plan which I have pointed out. It strikes directly at the root of the evil (as I shall presently shew, when speaking of the *physical* effects of travelling,) by removing the causes on which this sombre and irritable state of mind depends. It is true that, in some cases of confirmed hypochondriacism, no earthly amusement, no change of scene, no mental impressions or excitement, no exercise of the body, can cheer the gloom that spreads itself over every object presented to the eye or the imagination! With them, change of place is only variety of woe—*cœlum non animum mutant*. Yet, from two or three instances which have come within my knowledge, of the most inveterate, and apparently indomitable hypochondriacism being *mitigated* by travelling (though the mode of conducting the journey was far from good), I have little doubt that many cases of this kind, which ultimately end in insanity, or at least in monomania, might be greatly ameliorated, if not completely cured, by a system of exercise conducted on the foregoing plan, and urged into operation by powerful persuasion, or even by force, if necessary. The change for the better, in such cases, is not perceptible at the beginning of the tour; but when the functions of the body have once begun to feel the salutary influence of the journey, the mind soon participates, and the gloom is gradually, though slowly dispelled. Where the mental despondency is clearly dependent on disorder of the digestive organs, and has not yet induced any permanent disease of the brain, an almost certain cure will be found in a journey of this kind, for both classes of complaints. It is hardly necessary to observe that beneficial effects to a greater or less extent, will be experienced in other sombre and triste conditions of the soul, resulting from moral causes, as sorrow, grief, disappointment, crosses in love, &c. by a tour conducted in such a manner as strongly to exercise the body, and cheerfully excite the mind.

I have already shewn the powerful influence of moral causes in de-

ranging the functions of the body through the medium of the intellectual functions. The same functions may be made the medium of a salutary influence. In the greater number of nervous and hypochondriacal complaints, the attention of the individual is kept so steadily fixed on his own morbid feelings as to require strong and unusual impressions to divert it from that point. The monotony of domestic scenes and circumstances is quite inadequate to this object; and arguments not only fail, but absolutely increase the malady, by exciting irritation in the mind of the sufferer, who thinks his counsellors are either unfeeling or incredulous towards his complaints. In such cases, the majestic scenery of Switzerland, the romantic and beautiful views in Italy and the Rheingau, or the keen mountain air of the Highlands of Scotland or Wales, combined with the novelty, variety, and succession of manners and customs of the countries through which he passes, abstract the attention of the dyspeptic and hypochondriacal traveller (if any thing can) from the hourly habit of dwelling on, if not exaggerating, his own real or imaginary sensations, and thus help to break the chain of morbid association by which he is bound to the never-ending detail of his own sufferings. This is a paramount object in the treatment of these melancholy complaints; and I am convinced that a journey of this kind, in which mental excitement and bodily exercise are skilfully combined, would not only render many a miserable life comparatively happy, but prevent many a hypochondriac and dyspeptic from lifting his hand against his own existence. It would unquestionably preserve many an individual from mental derangement.*

This principle was well understood long before medicine was established as a science. At the extremities of Egypt were two temples dedicated to Saturn, and to these the melancholics or hypochondriacs of ancient days were sent in great numbers. There the priests worked on the body as well as the mind by the pretended influence of supernatural, and the real influence of medicinal agents. The consequence was, that miracles, or at least *miraculous* cures were daily performed. The Romans sent their invalids to Egypt for change of scene; and Hippocrates has distinctly recommended those afflicted with chronic diseases, to change the air and soil—"In morbis longis solum mutare." It would be going out of my province to speak of the benefits of travelling in any other moral point of view than that which is connected

* It must be evident that, in the higher grades of this disorder, the individual should be accompanied by one who understands the rationale of the remedy, and who has good sense and discernment enough to adapt it properly to the strength and other varying circumstances of the patient.

with the restoration of health : I shall, therefore, proceed to a consideration of the effects of this combination of mental and corporeal exercise on our bodily functions.

II. *Physical Effects*.—The first beneficial influence of travelling exercise in the open air is perceptible in the state of our corporeal feelings. If they were previously in a state of morbid acuteness, as they generally are in ill-health, they are rendered less sensible. The eye, which was before annoyed by a strong light, soon becomes capable of bearing it without inconvenience ; and so of hearing, and the other senses. In short, morbid sensibility of the nervous system generally is obtunded, or reduced. This is brought about by more regular and free exposure to all atmospheric impressions and changes than before, and that under a condition of body, from exercise, which renders these impressions quite harmless. Of this we see the most striking examples in those who travel among the Alps, or other mountains. Delicate females and sensitive invalids who, at home, are highly susceptible of every change of temperature and other states of the atmosphere, will undergo extreme vicissitudes among the mountains, without the smallest inconvenience. I will offer an example or two in illustration. In the month of August, 1823, the heat was excessive at Geneva and all the way along the defiles of the mountains, till we got to Chamouni, where we were, at once, among ice and snow, with a fall of 40 or more degrees of the thermometer, experienced in the course of a few hours, between mid-day at Salenche, and evening at the foot of the Glaciers in Chamouni. There were upwards of fifty travellers here, many of whom were females and invalids ; yet none suffered inconvenience from this rapid atmospheric transition. This was still more remarkable in the journey from Martigny to the Great St. Bernard. On our way up, through the deep valleys, we had the thermometer at 92° of reflected heat for three hours. I never felt it much hotter in the East Indies. At nine o'clock that night, while wandering about the Hospice of the St. Bernard, the thermometer fell to six degrees below the freezing point, and we were half frozen in the cheerless apartments of the monastery. There were upwards of forty travellers here—some of them in very delicate health ; and yet not a single cold was caught, nor any diminution of the usual symptoms of a good appetite for breakfast next morning.

This was like a change from Calcutta to Melville Island in one short day. So much for the ability to bear heat and cold by journeying among the Alps. Let us see how hygrometrical and barometrical changes are borne. A very large concourse of travellers started at day-break from the village of Chamouni to ascend the Montanvert and Mer

de Glace. The morning was beautiful; but, before we got two-thirds up the Montanvert, a tremendous storm of wind and rain came on us, without a quarter of an hour's notice, and we were drenched to the skin in a very few minutes. Some of the party certainly turned tail; and one Hypochondriac nearly threw me over a precipice, while rushing past me in his precipitate retreat to the village. The majority, however, persevered, and reached the Chalet, dripping wet, with the thermometer below the freezing point. There was no possibility of warming or drying ourselves here; and, therefore, many of us proceeded on to the Mer de Glace, and then wandered on the ice till our clothes were dried by the natural heat of our bodies. The next morning's muster for the passage over the Col de Balme shewed no damage from the Montanvert expedition. Even the Hypochondriac above-mentioned regained his courage over a bottle of Champagne in the evening at the comfortable "Union," and mounted his mule next morning to cross the Col de Balme. This day's journey shewed, in a most striking manner, the acquisition of strength which travelling confers on the invalid. The ascent to the summit of this mountain pass is extremely fatiguing; but the labour is compensated by one of the sublimest views from its highest ridge, which the eye of man ever beheld. The valley of Chamouni lies behind, with Mont Blanc and surrounding mountains, apparently within a stone's throw, the cold of the Glaciers producing a most bracing effect on the whole frame. In front, the Valley of the Rhone, flanked on each side by snow-clad Alps, which, at first sight, are taken for ranges of white clouds, presents one of the most magnificent views in Switzerland, or in the world. The sublime and beautiful are here protended before the eye, in every direction, and in endless variety, so that the traveller lingers on this elevated mountain pass, lost in amazement at the enchanting scenery by which he is surrounded on every point of the compass. The descent on the Martigny side, was the hardest day's labour I ever endured in my life—yet there were three or four invalids with us, whose lives were scarcely worth a year's purchase when they left England, and who went through this laborious, and somewhat hazardous descent, sliding, tumbling and rolling over rocks and through mud, without the slightest ultimate injury. When we got to the goat-herd's sheds in the valley below, the heat was tropical and we all threw ourselves on the ground and slept soundly for two hours, rising refreshed to pursue our journey.

Now these and many other facts which I have adduced, offer incontestible proof how much the morbid susceptibility to transitions from heat to cold—from drought to drenchings—is reduced by travelling exercise in the open air. The vicissitudes and exertions which I have

described would lay up half the effeminate invalids of London, and kill, or almost frighten to death, many of those who cannot expose themselves to a breath of cold or damp air, without coughs or rheumatisms, in this country. These facts may suggest some important indications to the physician who has charge of patients labouring under, or threatened with, certain affections of the chest.

The next effect of travelling exercise in the open air which I shall notice, is its influence on the organs of digestion. This is so decided and obvious, that I shall not dwell long on the subject. The appetite is not only increased; but the powers of digestion and assimilation are greatly augmented. A man may eat and drink things while travelling, which would make him quite ill in ordinary life. A strong proof of its effects on assimilation is afforded by the universal remark that, although much more food is taken in while travelling, much less fecal remains are discharged, and costiveness is a very general symptom among those who make long and repeated journeys, especially in a carriage or on horseback. The motions, which were previously of bad colour and consistence, soon become formed, or even solid, and of a perfectly healthy appearance. The constipation, which often attends passive or mixed exercise, on these occasions, is hardly ever accompanied by any inconvenience; and travellers will go two or three days without a motion, and experience no disagreeable sensation, although the same degree of confinement of the bowels, at other times, would render them ill, or at least very uncomfortable.

These unequivocally good effects of travelling on the digestive organs, account satisfactorily for the various other beneficial influences on the constitution at large. Hence dyspepsia, and the thousand wretched sensations and nervous affections thereon dependent, vanish before persevering exercise in travelling, and new life is imparted to the whole system, mental and corporeal. In short, I am quite positive that the most inveterate dyspepsia (where no organic disease has taken place) would be greatly mitigated, if not completely removed, with all its multifiform sympathetic torments, by a journey of two thousand miles through Switzerland, Germany, or England, conducted on the principle of combining active with passive exercise in the open air, in such proportions as would suit the individual constitution and the previous habits of life.—This, it is true, is the rich man's remedy. But what is the expenditure of time and money necessary for its accomplishment, compared with the inestimable blessing of restored health? How many thousand opulent invalids saunter away their time and their wealth, at watering-places in this country, during the Summer and Autumn, with little or no improvement of constitution, when a three months' course of constant

exercise in the open air would cure them of all their maladies! The fact is—the power of this remedy is little known—and the manner in which it is applied by many invalids is not calculated to shew its worth.*

The kind of exercise under consideration has a marked influence on the absorbent system. It excites this class of vessels into great activity. The fluids, even from the bowels, are rapidly taken up into the circulation, and thrown off by the skin, which is one cause of the constipation to which travellers are subject. This increase of activity in the function of the skin, exerts a very salutary influence on the functions of various internal organs, with which the surface is sympathetically associated. The secretion of bile is thus greatly improved, and this is of no mean consequence in many complaints. To the tropical invalid, with torpid liver and torpid skin, this remedy presents the highest advantages; and I hope the present remarks will induce him not to neglect such an agreeable and useful remedy.

The effects of travelling, on the absorbents, point at once to the benefits which may be derived from it, in cases where there is a dropsical tendency. In one gentleman whom I knew on this tour, there had been an cedematous state of the lower extremities for many years, but his legs became as small as ever they had been, in the course of one month's travelling. This activity of the absorbents causes the fat and flabby parts of the body to be rapidly reduced, while the exercise and the improved digestion increase the force and firmness of the muscular system. Hence corpulent people become thinner on the journey, but their muscles are increased in size; and what they lose in weight they gain in strength. This salutary change of proportion between the muscular and the adipose systems of the body gives greater freedom to the functions of many important organs, especially to the heart and lungs. Hence people who are easily put out of breath by exercise, or by going up an ascent, soon acquire power to do both, without inconvenience.

The increased activity of the absorbents, during the combination of active and passive exercise in travelling, offers a powerful agency for the removal of morbid growths in the body, such as tumours, scrofulous swellings, &c. and this is one reason why I think great advantage might be derived from travelling, in cases where there is a tendency to consumption,—a disposition so much connected with scrofulous affection both internally and externally.

The effects of travelling on the circulation are peculiar. Active

* It is evident that this restoration, however, will not be lasting, unless the invalid pursues the system of temperance already pointed out, after his return to his usual pursuits, aided by active exercise in the open air.

exercise unquestionably quickens the pulse—while passive exercise in a carriage renders it slower. In those diseases of the heart, therefore, where there is enlargement of the organ, with increase of force in the circulation, I think there can be little doubt that travelling, with combined active and passive exercise, would be dangerous, and would be likely to augment the disease. In such cases the exercise should be completely passive, and then the effects would be beneficial. But there are many cases where there is a morbid irritability of the heart, from sympathy with other organs, as the stomach, liver, &c. In these, travelling offers a powerfully salutary remedy, not only by lessening the irritability of the heart, but by improving the functions of those organs with which the heart sympathises. The travelling exercise, in these instances, should be at first entirely passive, and, as the irritability of the organ decreases, active exercise might be gradually ventured on, and progressively augmented. The exercise of travelling, whether active, passive, or both combined, has a very marked influence in producing an equal distribution of the blood to all parts of the body. This important effect must render it a powerful agent in correcting undue determinations of blood to any particular organ or part—a phenomenon which plays a conspicuous part in many of the most dangerous diseases to which the human fabric is liable. Hence, the utility of travelling, in many affections of the head and other parts to which an unequal distribution of blood may be habitually directed.

There is but one other effect of travelling to which I shall allude, before I close this Essay, but I think it is a very important one—if not the most important of all. It is the influence which *constant change of air* exerts on the blood itself. Every one knows the benefits which are derived from change of air, in many diseases, when that change is only from one part to another, a few miles separated. Nay, it is proved, beyond all possibility of doubt, that the change from what is considered a good, to what is thought a bad air, is often attended with marked good effects. Hence it is very reasonable to conclude, that the *mere change* of one kind of air for another has an exhilarating or salutary effect on the animal economy. It is true, that we have no instruments to ascertain in what consists this difference of one air from another, since the composition of the atmosphere appears to be nearly the same on all points of earth and ocean. But we know, from observation, that there are great differences in air, as far as its effects on the human body are concerned. Hence it would appear that the human body, confined to one particular air, be it ever so pure, languishes at length, and is bettered by a change. This idea is supported by analogy. The stomach, if confined to one species of food, however wholesome, will, in time,

languish and fail to derive that nutriment from it, which it would do, if the species of food were occasionally changed. The ruddy complexion then of travellers, and of those who are constantly moving from place to place, as stage-coachmen, for example, does not, I think, solely depend on the mere action of the open air, on the face, but also on the influence which change of air exerts on the blood itself in the lungs. I conceive, then, that what Boerhaave says of exercise, may be safely applied to change of air. “*Eo magis et densum, et purpureum sanguinem esse, quò validius homo se exercuerit motu musculorum.*” It is to this *constant change of air*, as well as to the constant exercise of the muscles, that I attribute the superiority of the plan of travelling which I have proposed, over that which is usually adopted—where HEALTH is the entire object.

Many will think that I have dwelt too much on the subject of exercise, and especially those who have read my other works. But long experience has convinced me that this PREVENTIVE as well as CURE of diseases, multifarious in their shapes, and distressing in their effects, is one of the most important which a physician can point out to his non-professional, as well as his medical brethren. He bequeathes the advice to them as his last precept—and many will have cause to remember it with gratitude, when he is in his grave!

SECT. XV.--MR. ABERNETHY'S SYSTEM.

ALTHOUGH there are some whimsical opinions in the rules which Mr. Abernethy has laid down respecting diet and medicine, yet, upon the whole, this able, though eccentric physiologist has done a great deal of good by his doctrines—not entirely unmixed, perhaps, with some harm. The following short summary of his doctrines will be found to corroborate, as far as they go, some of the positions which I have endeavoured to maintain in this Essay.

Mr. A. believing the stomach and other organs of digestion, when disordered, to be in a state of “weakness and of irritability,” has for his object “to diminish the former and allay the latter.” Believing also that the secretions, in these cases, are “either deficient in quantity or depraved in quality,” he endeavours to excite, by means of medicine, “more copious or healthy secretions.” As the strength of our body depends on the nutriment we derive from our food, so we must attend to the quantity, quality, and times of taking food and drink. In respect

to *quantity*, Mr. A. justly observes that "there can be no advantage in putting more food into the stomach than it is competent to digest, for the surplus can never afford nourishment to the body: on the contrary, it will be productive of various evils." Mr. A. in short, avers that

"Man, in civilized life, having food always at command, and finding gratification from its taste, and a temporary hilarity and energy result from the excitement of his stomach, which he can at pleasure produce, *eats and drinks an enormous deal more than is necessary for his wants or welfare:—he fills his stomach and bowels with food which actually putrefies in those organs: he also fills his bloodvessels till he oppresses them, and induces diseases in them as well as in the heart.*" P. 76.

After this appalling picture of the effects of repletion or intemperance, Mr. A. lays it down as an axiom that, "in proportion as the powers of the stomach are weak, so ought we to diminish the quantity of our food," taking care, however, that it should be nutritive and easy of digestion. By adopting such an abstemious plan of diet, says Mr. A. as may produce even "a sensation of want in the system, we do that which is most likely to create appetite and increase the power of digestion."

In respect to *quality*, Mr. A. observes that "*this should be adapted to the feelings of the stomach.*" Some substances that would, *à priori*, be considered indigestible, will agree well even with a dyspeptic stomach. We must, therefore, attend to the peculiarities of individuals and to the instincts of nature. Regarding the periods of taking food, Mr. A. certainly appears rather eccentric. It is probable, he observes, that three hours may elapse in health before the digestion of a moderate meal is effected—and the same time, at least, should be allowed when the stomach is disordered. Another three hours should be dedicated to repose of the stomach. He considers that much harm is done by eating too often and fasting too long. He says he could relate many instances of persons who were much emaciated, some of whom were of considerable stature, "becoming muscular and fat upon four ounces of the most nourishing and easily digested food taken three times a day."

Water is considered by Mr. A. as the only real diluent. Diluents, he thinks, should not be taken during or immediately after our meals, since they render the juices of the stomach less efficacious in the digestion of our food. Hunger and thirst, he observes, are incompatible sensations, and were we in a state of nature, thirst would probably not occur till some time after taking food, when drink would not prove injurious. Rest he considers necessary after food, as exertion disturbs the process of digestion. As diluents, he recommends toast-water, mint or balm tea, light ginger tea (when the stomach requires a stimu-

lus), linseed tea, or common tea, "three or more hours after each meal, during the night or early in the morning." In short, he thinks we should not take fluids while the process of digestion is going on. Vinous liquors he regards as stimulant medicines, and are in many cases, useful. But they are very liable to turn acid and prove injurious. They should not be taken, he says, during meals, "lest the temporary excitement they produce should induce them to take more food than the powers of the stomach are capable of digesting; but, afterwards, they may be allowed so much of them as may be required to induce agreeable feelings"—or rather "to prevent those uncomfortable sensations which the want of them may occasion—and it may be added, that the less of them the better." P. 84.

So much for dietetics. In respect to medicines, Mr. A. observes that—"purging medicines sometimes relieve unpleasant sensations; but they do not, in general, produce even this effect; and all active purges seem to me to increase disorder. It is natural to suppose that strong stimuli will aggravate the unhealthy condition of weak and irritable parts." 90. In order to correct the vitiated state of the biliary secretion, Mr. A. recommends the blue-pill, generally in five-grain doses every second night. "The relief which arises from the increase or correction of the biliary secretion, in a great number of these cases, shews how much the liver is concerned in causing or aggravating the symptoms in these diseases." 93. He has known patients who had voided "nothing but black stools for some months, discharge fæces of a light yellow colour, denoting a healthy, but deficient secretion of bile, immediately upon taking such small doses of mercury." Mr. A. remarks, also, that "the effect of this change on the constitution and spirits has been surprisingly great, *though the state of the stomach did not appear to be altered.*" Mr. Abernethy is a strong advocate for exercise in the open air. "Many people who are extremely irritable and hypochondriacal, and are constantly obliged to take medicines to regulate their bowels, whilst they live an inactive life, no longer suffer from nervous irritation, or require aperient medicines, when they use exercise to a degree that would be excessive in ordinary constitutions." The following is a recapitulation in his own words.

"I would prescribe to my patients the following rules:—They should rise early when their powers have been refreshed by sleep, and actively exercise themselves in the open air till they felt a slight degree of fatigue; they should rest one hour, then breakfast, and rest three hours, in order that the energies of the constitution should be concentrated in the work of digestion; then take active exercise again for two

hours—rest one: then, taking their dinner, they should rest for three hours, exercise two—rest one—and take their third slight meal.”

He does not allow bad weather to prevent the regular quantum of exercise, “since it is in the power of every one to protect themselves from cold by clothing, and the exercise may be taken in a chamber, with the windows thrown open, by walking actively backwards and forwards, as sailors do on ship-board.”

Such are the celebrated dietetics and hygiene of this talented and eccentric surgeon, as developed at page 72 and following sheet of his work, so often quoted by others—so often recommended by himself.

Mr. A. remarks at the said page 72 as follows—“I do not feel altogether competent to give full directions relative to this subject; because *I have never attended to medical cases with that degree of observation which would lead me properly to appreciate the efficacy of different medicines*, when administered either in their simple or compounded forms.” Notwithstanding that nine in ten of Mr. Abernethy’s morning patients, for 25 years past, have been purely medical cases, without any local complaint whatever; yet I believe the above passage to be literally true. Mr. Abernethy does not appear to have profited by the immense field of observation which lay before him; and nearly the same plan of treatment is, therefore, laid down for all patients indiscriminately—the same in the ninth as in the first edition of the work.

The principles of his work are less objectionable, however, than the practice. Mr. A. has entirely overlooked that large and preponderating proportion of cases where the irritability of the gastric and intestinal nerves is unconnected with, or, at all events, not dependent on, the faulty state of the hepatic and other secretions. In these cases, the five grains of blue-pill at night, and the salts and senna every other morning, will ultimately increase the malady. Indeed, in a note to the ninth edition, published in the year 1827, Mr. A. informs us that he has perused Dr. Hamilton’s work on purgative medicines, and considers himself very fortunate in finding the coincidence of practice between Dr. H. and himself. Nothing is more certain, however, than that Dr. Hamilton’s purgative plan is destruction to the great majority of dyspeptic patients, as thousands and thousands have found to their cost. As the practice, then, of Mr. Abernethy is founded almost exclusively on the idea of disordered secretions and loaded bowels, so it leaves entirely out of view the important indications of counter-irritation and local depletion in affections of the stomach and bowels. As far as I can judge of Mr. A.’s practice, too, the tonic plan, so beneficial after abstemiousness and alterative medicines, is very ineffici-

ently employed. The various causes of the disease, and the manner in which the mind acts on the body, and the body on the mind, are not at all investigated: which is the more to be regretted, since no man ever had a wider field for observation—or probably ever will have in future. I should not have ventured to make this remark on Mr. Abernethy's sins of *omission*, had he not fully and candidly acknowledged them himself in the above passage. He has profited, in one sense of the word, by the innumerable patients who have portrayed their disorders before him; but he has still left for future observers the toil and the difficulties of investigation. "The subject," says he, "is so important, that the public would be highly indebted to any practitioner who would point out the varieties of these diseases, and the appropriate modes of cure."—Page 73.

But in pointing out what I conceive to be defects in Mr. Abernethy's *medicinal* treatment of dyspeptic complaints, I can have no hesitation in acknowledging the benefit which he has conferred on the profession, and on society at large, by the able manner in which he has advocated the good effects of temperance, and delineated the many evil consequences which flow from the ingurgitation of too much food and drink.

Latterly, this distinguished surgeon appears to have been somewhat less inclined to recommend his book to the patient, in addition to the prescription. He has, therefore, printed directions for diet, which, of course, like the bed of Procrustes, *must fit* the patient. The following is the printed formula or dietary.

"THE RULES OF DIET, IN DYSPEPTIC CASES, may be thus stated in an abbreviated form:—

- "1. The food should be of the most nourishing and readily digestible kind.
- "2. The quantity taken at a meal should not be more than it is probable the stomach will perfectly digest.
- "3. The meals should be taken at regular periods of six hours, three times a day: and when the stomach can digest very little food, they may be taken four times in twenty-four hours.
- "4. Every meal of food should be reduced to minute subdivision and pulpy consistence by mastication, or otherwise: and suffered to remain in the stomach unmixed with liquids, in expectation that it will be dissolved by the juices of the stomach.
- "5. Drink should be taken four hours after each meal; allowing that time for its perfect digestion, and two hours for the conveyance

of liquids from the stomach before the pulpy food be again received.

- “ 6. The drink then taken should not contain fermentable substances. It should be boiled water; which may be flavoured with toast, or prevented from producing a qualmish state of stomach, by pouring it upon a trivial quantity of powdered ginger.

“ It is not meant by these rules to debar persons from taking a small tea-cupful of liquid with breakfast, or a glass or two of wine with dinner, if it seems to promote the digestion of their food.”

OBSERVATIONS
ON THE
DISEASES AND REGIMEN
OF
INVALIDS

ON THEIR RETURN FROM
HOT AND UNHEALTHY CLIMATES.

THE English youth leaves his native shores, with vigorous health and buoyant spirits, for a foreign land of promise, where he is to meet with adventures, acquire fame, and realise a fortune. All the happy events (real or ideal) of his future journey through life, are painted by his ardent imagination in prominent characters, on the foreground of the scene; while reverses, sickness, disappointments—death itself, are all thrown into the shade, or, if suffered to intrude, only serve as incentives to the pursuit which has been commenced.

During the short span of existence to which man is doomed on earth, it is a merciful dispensation that youth anticipates no misfortune—and that, when the evil day arrives in after-life, HOPE comes, on glittering wing, and gilds the scene even till the last ray of our setting sun is extinguished!

I have already portrayed, in another place, the dangers which the tropical sojourner runs, the diseases to which he is subject, the remedies which experience has found most effectual, and the regimen which appears to me most appropriate in the Torrid Zone.* A task remains, which I have not hitherto undertaken, but which the experience and observation of thirty years may now enable me to accomplish. The nature of that task is explained in the title of this part of my work.

An epoch sooner or later arrives, when the completion of a period of service—the acquisition of competent fortune—or, what is more frequent

* Influence of Tropical Climates on European Constitutions, 5th Edition.

than any other, the loss of health, points to a return to our native land—a land which the more constantly engrosses our daily thoughts and nightly dreams, the farther we are distant, and the longer we are absent from it. None but those who have sojourned for years on foreign shores, can appreciate the feelings of the European, who wastes the prime of life beneath a tropical sun, languishing in body, and pining in thought to revisit the scenes of his youth. If he crossed the seas in early life, full of anticipations that could, alas! be but rarely realized—he shapes his course back again across the same pathless deep, with chastened but scarcely less ardent hopes of health and happiness, on the soil which gave him birth.—Here, too, he is destined to encounter dangers as well as disappointments. The powers of the constitution, however plastic, cannot immediately accommodate themselves to great and sudden changes of climate, even when the transition is from a bad to a good one; and the tropical invalid requires full as much caution and prudence in approaching the shores of England, as he did in landing, at the former period, on the banks of the Ganges.

When the European has become much debilitated by liver affection, dysentery, or fever and its consequences, his main hope of recovery rests on change of climate; and, under such circumstances, the sea-voyage will often effect a cure. Indeed, the instances are not few where more benefit is obtained by the voyage home, than by subsequent residence in England. The voyage, though not totally free from inconvenience, presents not the thousand temptations to deviate from regular habits and regimen, which afterwards assail the tropical invalid, when he mingles with society in his native country. Besides, the uniformity and salubrity of the sea air, aided by the mental exhilaration of a *homeward* voyage, produce surprising effects on the animal economy. During this voyage the effects or sequelæ of fevers generally disappear, and both appetite and strength return. But chronic dysentery and hepatitis are not so easily removed, and these the tropical invalid most commonly brings with him to Europe—sometimes considerably mitigated, but at others, rather exasperated, especially if stormy wet weather is experienced off the Cape, or if the ship arrives in the Channel at an unfavourable period of the year. By residence in a hot climate, the constitution becomes assimilated to it, and, in some measure, changed—the return, therefore, to a cold, though more healthy latitude, is liable to produce, if great care be not taken, a determination to those organs which have been weakened by previous disease, and thus a more or less acute or subacute inflammation is often set up in the mucous membrane of the bowels—or they are rendered more irritable than before the invalid left India. A subacute inflammation of the liver is sometimes thus super-

induced on a chronic disease or a torpid state of that organ, requiring not only the subduction of the stimulus of food and drink, but even local abstractions of blood from the region of the liver.

But the most serious consequence of a return to Europe, after long residence in a tropical climate, is the aggravation or even production of disease in the chest. The mucous membrane of the lung sympathises readily with that of the stomach, and thus is produced what is called a stomach cough. Chronic disease of the liver produces the same thing, whether by means of sympathy, or simply by contiguity with the diaphragm, which is so intimately connected with the organ of respiration. Now, in a great majority of instances, these affections of the chest are only *symptomatic*, even when the invalid has returned to Europe, and will subside in proportion as the functions of the stomach and of the liver are restored.* But, on the other hand, there are many cases where the *symptomatic* affection of the chest has continued so long as to induce *actual* disease there—which disease will not be removed, nor even materially relieved by the remedies prescribed for the liver or stomach complaint.

In this country, the symptomatic affection of the lungs, in chronic hepatitis and indigestion, has excited much attention, and has been treated of under the names of “hepatic phthisis,” “dyspeptic phthisis,” and “stomach cough.” Where there is evidently derangement of the liver or stomach, and the patient is lately from a hot climate, the English practitioner sets down any pulmonary affection that may be complained of, as symptomatic, of course, of the abdominal disorder—and thus, that time is lost in abortive attempts to remove both classes of complaints by striking at the original one, which might have saved the lungs from irremediable disorganization. Many are the instances I have seen, and continue to see, where patients have been pronounced to be labouring under *symptomatic* disease only, while a few minutes’ examination of the chest, by percussion and auscultation, detected organic changes in the lungs or heart, which had passed the period when any chance of recovery could be expected. This, in fact, is one of the greatest dangers which the tropical invalid runs, when he embarks for his native climate, where pulmonary complaints are the prevailing diseases. On this account, he should, from the moment he goes on ship-board, pay the utmost attention to his dress, and most cautiously avoid all exposure to wet and cold on the voyage homewards. This caution is not less necessary for the

* In tropical climates, pulmonary consumption is comparatively a rare disease; but in the hotter countries of Europe, as the South of France, Italy, &c. I believe that this dreadful scourge is little less frequent than in England.

invalid affected with the usual consequences of tropical diseases only, and where the chest is free at the time he embarks. As he approaches the Cape, and afterwards the Channel, he is much more liable to pulmonary affection than a person who has never suffered from hepatic or stomach disorder; and, if the chest once becomes affected, he is much more exposed to fixed and dangerous disease there. If the pulmonary affection, even of the mildest kind, and purely symptomatic, has manifested itself between the tropics, he is in still more danger—and if the English practitioner fails to make the most rigid examination of the chest, on his arrival, he becomes morally responsible for all the serious consequences which may subsequently result from this neglect. In short, I have no hesitation in asserting, that the disorder of the chest, even if purely symptomatic, demands more attention, and is really of more importance than the abdominal disorder from which it arose. There is little or no *organic* disease of the *liver* in nineteen cases out of twenty of those who return to this country labouring under what is called “liver complaint,”—and this remark is still more applicable to the *stomach*—consequently, there is but little risk of life. But if the *lungs* once become affected in structure—if *symptomatic* be confounded with *organic* derangement, or suffered by neglect to pass into that state, the case will rarely be otherwise than fatal. This case is quite different from that of the liver; for if symptomatic affection of the chest be confounded with incipient organic disease, the remedies for the one will be of no use whatever in the other.

The surgeon of the ship, therefore, should take an early opportunity of examining all invalids complaining of cough, or who are easily put out of breath on ascending ladders or stairs. If they cannot lie low in bed, or take in a deep inspiration without exciting cough—and still more if they feel uneasiness in any part of the chest, the case should be immediately attended to before the patient gets into the high latitudes, where the malady will certainly be increased. A blister—a few leeches—or a crop of pustules excited by tartar-emetic, aided by warm dress, abstinence from stimulating drink, and some gentle diaphoretic to act on the skin, would save many a day's sufferings afterwards—nay, many a valuable life. But of this more hereafter.

It is on the voyage to England where there are many circumstances favourable to the object in view, that the invalid should seriously think of adopting a system of diet and regimen that might not only obviate any injurious effects of a sudden transition from a hot to a cold climate, but contribute materially to the removal of those complaints contracted by residence in the former. It cannot, indeed, be too strongly impressed on the mind of the tropical invalid, that without a firm resolution to

coerce his appetites into complete subjection, and make them subservient to the restoration of his health, he will gain little by a return to his native skies; but, on the contrary, he will either confirm those maladies under which he already labours, or, what perhaps is worse, convert them into forms less formidable indeed in appearance, but effectually subversive of every enjoyment, mental or corporeal, which can render life desirable. Of all the miseries to which man is liable, by the frailties of his nature, there is none more terrible to endure, or difficult to remove, than that HYPOCHONDRIACAL DESPONDENCY which is sure to settle on the tropical invalid, in his own country, in the midst of his friends, and in the possession of wealth, unless he succeeds by timely and proper measures, in correcting those morbid conditions of the digestive organs, from which this DEMON draws a gigantic power and influence, that tyrannize over all fortitude, philosophy—and often over religion itself! The extent of this evil is so great in these Isles, that it has been suspected, and not without probability, that our tropical colonization has introduced and propagated, by hereditary descent, a strong disposition to stomach and liver affections beyond that which is observed in any other country. Be this as it may, the instances of insanity and suicide, from this cause, are not exceedingly rare; while the number of hypochondriacs, cursed, I might almost say, in the possession of reason and wealth, but driven to despair by the torture of their own morbid feelings and nervous irritation, which may be seen in all parts of the British dominions, but especially at watering-places, is truly astonishing! Of these, our tropical invalids form no inconsiderable portion; and although the wretchedness of their sensations is only known to themselves, their medical attendants, and some of their intimate acquaintances, the amount of it is great beyond all calculation.

That this unhappy winding up of a life spent under a burning sun, in the acquisition of wealth, and in the vain expectation of enjoyment in declining years, cannot always be prevented, is but too true; yet, at the same time, I know from repeated examples and multiplied observation, that a rigid system of self-control, adopted as soon as the individual withdraws himself from the deleterious influence of a hot climate, and persisted in for a certain time after his arrival in Europe, would, in nine cases out of ten, be followed, not only by restoration of health, but by an equilibrium of spirits and mental serenity, which none but the temperate, the abstemious, and the prudent, can possibly appreciate. This system has already been detailed in the first part of the work.

The principal states of indisposition under which an invalid embarks for Europe, are debility from long-continued disease of the liver, or from the remedies unavoidably employed for that complaint—debility from

fever, or from a continuance of regular or irregular paroxysms of the disease—and bowel complaints.

Debility can only be removed, of course, by the introduction of nutriment into the *system*—but this does not always follow the introduction of food into the *stomach*, even when taken with considerable relish. One of the first effects of the sea-air is an increase of appetite, and the invalid hails this as a favourable omen, and indulges the propensity to eat. The debility of the various organs, however, and their previous desuetude to much nourishment, seldom permit this new propensity to be satisfied, without subsequent detriment. Indigestion, feverishness, or irritation of the bowels is apt to follow too free an indulgence of the appetite, and consequently there is no increase of strength from this temporary return of desire for food. *Appetite*, indeed, is a doubtful criterion for taking food—*digestion*—easy digestion, is the only sure guide. If we feel uneasy after *four* ounces of food, but comfortable after the ingestion of *two* ounces, we shall derive more support from the latter than from the former. The quantity and the quality of the food must be both carefully regulated—and, in general, the invalid's own feelings will warn him when he has erred on either point. But this is not always the case. There is no effect of indigestion more common than *dejection of mind*, when no corporeal inconvenience appears to follow. The nerves of the stomach and upper bowels will be irritated, and this irritation will be propagated to the whole nervous system, and to all its moral and intellectual attributes, by quantities and qualities of food which excite no sensible uneasiness in the organs of digestion, and produce no change in the secretions or excretions by which the evil might be detected. A want of attention to this circumstance—or rather a want of knowledge of it, has led, and leads daily, in numerous instances, to states of mental despondency, ending ultimately in complete hypochondriacism. In insanity, the morbid condition of the *mind* is *invariably* dependent on a morbid condition of the *body* (whether induced by moral or physical causes) although the *latter* is rarely cognizable by external corporeal symptoms. This holds equally good in hypochondriacism. The mental despondency is *invariably* dependent on some disorder of the body, and, in a majority of cases, it is immediately dependent on a morbid or irritable state of the nerves of the stomach and bowels. Of the truth of this I have had such multiplied proofs, that not a doubt remains on my own mind respecting it. It is as useless to attempt the removal of this mental despondency by moral means or mere persuasion, as to try to remove a fever or an inflammation by argument. The attempt, indeed, betrays a great ignorance of the real nature of the complaint in the physician. Moral means may

certainly contribute to improvement of the general health, and this will much improve the state of the digestive organs, on which the mental despondency depends. It is only in this way that moral means can have any influence on hypochondriacism. But of this, enough has been said in the first part of the work.

If the invalid only labours under that debility produced by fever and the remedies used for it, the sea-air, and the gradual increase of tone in the digestive organs will generally be sufficient to renew the strength, under the caution above-mentioned respecting diet. In such cases it can rarely be prudent to exhibit direct tonics at the beginning of the voyage. A warm bitter is quite sufficient, as equal parts of infusion of ginger and gentian, with four or five grains of carbonate of soda, and a drachm or two of any bitter tincture in each dose. The bowels should be regulated by mild aperients that do not produce thin or watery discharges—an operation which should be avoided, but which, I am sorry to say, continues to do infinite mischief. Many practitioners and patients are absolutely infatuated with the benefit to be derived from the blue-pill at night, and the black dose in the morning. This medicine certainly sweeps away abundance of thin, fetid, slimy, and unhealthy secretions, and the patient feels lighter and more comfortable for a time; but a repetition of the practice produces the very secretions which it is designed to carry off or prevent. After clearing the bowels in this way, the great object is to procure *formed* motions, if possible, and that not oftener than once in the twenty-four hours. That medicine which goes slowly and without irritation along the intestinal canal, permitting the nutriment to be taken up by the absorbents, and gently stimulating the large intestines to discharge the useless residue, is the one to which we should have recourse. Aloes is the basis of such medicine; but as, in the class of patients now under consideration, there is generally a defective or vitiated condition of the biliary secretion, and an irritable state of the gastric and intestinal nerves, together with a torpid skin, it is necessary to combine other medicines with the aloes. A grain of blue-pill, two or three grains of extract of hyosciamus, and a quarter of a grain of ipecacuan, combined with as much aloes, or extract of colocynth, as is sufficient to move the bowels once daily, will be found a valuable form of aperient for the invalid on the voyage home. The hyosciamus allays the morbid irritability of the nerves of the digestive tube—the blue-pill gently excites the hepatic secretion as well as the pancreatic and gastric—the ipecacuan acts mildly on the skin—while the aloes or colocynth carries the whole slowly along the canal, and finally expels the fæcal remains in the course of the ensuing day. Some little time may be necessary to ascertain the proportions of these medicines that may suit

individual cases—but there can be little difficulty in obtaining the proper result in the end. It is supposed that a disposition to hæmorrhoids is an insuperable objection to aloes, or the compound extract of colocynth. This has been proved to be an error, and aloes is now commonly given by some of the best London practitioners for hæmorrhoids. It is *too much purging*, that increases and irritates piles rather than the *kind of purgative*. Where it is desirable to procure one free and copious operation in the morning, a common seidlitz powder taken at 7 o'clock, and before breakfast, will pretty certainly have this effect.

If the tropical invalid continues to be teased with regular or irregular paroxysms of fever, in spite of the above means, the sea-air, and strict regimen; then we must have recourse to certain specifics—and above all to the sulphate of quinine, a medicine which is, indeed, of singular efficacy, when properly managed, in many of those morbid conditions of the digestive organs resulting from the influence of tropical climates. The doses, however, should be small in the cases now under consideration, where there is generally some obstruction or congestion in the liver or spleen. The surgeon should attentively examine the state of these viscera, and, by local detractions of blood and counter-irritation, remove or lessen those affections on which the returns of the febrile paroxysm depend. When these organs are secured by such means, then from one to three grains of the quinine should be given every six hours, during the intermission, in an infusion of bark, quassia, or gentian—and neither the surgeon nor patient should be over-anxious to stop at once these paroxysms by larger doses of the medicine. It is far better gradually to give tone to the whole digestive apparatus, while the secretions of the glandular viscera are slowly improved by the mild aperient above-mentioned. The attacks, at first mitigated, and ultimately stopped, in this slow manner, will be far less liable to recur, than when overwhelmed suddenly by such powerful tonics as the quinine and arsenic in large doses. The invalid, however, ought to continue the use of quinine, in conjunction with bitters and aperients, for a considerable time after all periodical accessions have ceased, since changes of weather, irregularities in diet, and many other causes, are very apt to reproduce the paroxysms.

Although the subject of diet has been particularly considered in the first part of this Essay, yet it may not be improper to glance at it in this place, as connected with the tropical invalid. A ship cannot be supposed the best place for adopting a systematic course of diet, but as, from the Pharmacopœia, we select a very small number of medicines for practical use, so, from the interminable list of culinary substances, a very few indeed will suffice for the *necessary nutriment* of man, especially

when he is in a valetudinary state. In health, we may pamper the senses—as invalids, we must consult the *sensibility* and capability of the stomach and bowels without any reference to the palate. If we do not, we pay the penalty most severely.

The tropical invalid, then, returning for debility, resulting from liver-complaint, long courses of mercury, or protracted fevers of whatever type, should breakfast on ship-biscuit or stale bread toasted (with very little butter), and black tea, coffee, or chocolate, with very little milk and sugar. A slice of cold meat is better than butter for breakfast. As dinner is at an early hour, he should rarely give the stomach any more to do till that period. He should then dine on *from one to six or eight ounces* of plain animal food, according to his digestive powers, without vegetables of any description, unless stale bread or ship-biscuit be classed under that head. This will seem a most terrible rule! It is so in appearance, after the luxuries and provocatives of an oriental table. But let the invalid pursue it only till he passes the Cape of Good Hope, and then he has permission to change it, and adopt what system he pleases. If he will not adopt so rigid an abstinence from vegetable matter at dinner, the best thing, next to biscuit or stale bread, is well-boiled rice—rice or bread-pudding—or a dry mealy yam. In England, a mealy potatoe may be tried, but even this is apt to irritate the disordered nerves of a dyspeptic invalid.

In respect to drink, a table-spoonful or two of good-brandy to two wine-glassfuls of water, is a mixture preferable to wine of every kind. Sherry is the next best drink, not exceeding two or three glasses. If a sense of thirst prevail, while masticating *well and slowly* his food, he must take some of his drink—if not, let him finish before he drinks. The above potation should be made to suffice, if possible—and double the quantity should hardly ever be exceeded. It will be said that constitutions differ, and that what will agree with one stomach will not agree with another. This may be true; but we cannot make rules for exceptions. There will not be one individual in fifty with whom the above plan will be found to *disagree*. We know, indeed, that some people will rather indulge the senses than improve the health—and these will aver that such a rigid system of diet entirely disagrees with them. They have truth laid before them here; they may adopt it or neglect it, as they think proper. The penalty will fall on themselves, not on the prescriber. It is hardly necessary to say, that no other dessert than biscuit is at all to be ventured on.

Tea or coffee, with biscuit, or dry toast, at 6 o'clock—and half a pint of good gruel, sago, or arrow-root, with a table-spoonful of brandy, for supper, should close the day, at ten o'clock in the evening. The invalid

should then go to bed—and if he has been accustomed to more stimulation than the above scale affords, he will pass some sleepless nights, and be often tempted to break the vile system of abstemiousness which the doctor has prescribed. Let him persevere. Sleep will come, and that, too, of a more refreshing quality than ever followed the stupefying influence of wine or spirits. We daily hear it remarked, that long established habits of intemperance cannot be safely interrupted at once. Of the truth of this I have much doubt, because I have seen a few—alas! a *very few* instances, where downright habitual intoxication was suddenly checked without any bad consequence resulting. But this is not the point under consideration. I am speaking of habits which are looked upon as within the limits of temperance—for instance, the habit of drinking a pint of wine after dinner—and a glass or two of brandy and water in the evening, while smoking a cigar. This habit may be easily broken or at least diminished, and what is of still more consequence, the habit of *eating a great deal too much* through the day, may be readily and beneficially changed into abstemiousness. This is of still more consequence than the drink.*

Bowel-complaint is one of the most common diseases under which an invalid labours when embarking for Europe. It is one, too, which is seldom cured on the voyage home. After repeated attacks of dysentery or hepatitis, the mucous membrane of the colon and rectum is actually altered in structure, while that of the small intestines continues highly irritable for a long time. A large quantity of mucus and of very morbid secretions is constantly poured out from these surfaces, and their irritability will not permit the presence of food or fæces, as in a healthy condition of the alimentary canal. In those who die of dysentery, we find ulcerations in the colon and rectum, with thickening and other lesions of the coats of these tubes. In those, therefore, who have presented the same *symptoms*, but who have been fortunate enough to survive, there is every reason to believe, nay, there are positive proofs that ulcerations had existed, or do exist, as, indeed has been proved by dissection, when death has unexpectedly taken place from other diseases. Ulceration of the intestines may obtain without any discharge from the bowels, or particular pain that would indicate such a serious malady, as is proved by finding extensive ulcers in the mucous membrane, where death has been occasioned by fever—and that, too, without any tenderness on pressure of the belly being evinced during life. Where there is

* Let it be always remembered that I am speaking of invalids, and not of people in health, who, where air and exercise are taken, may indulge, in food and drink, to an extent which cannot be borne by those enfeebled by disease.

discharge of mucus, blood, and puriform fluid, we may pretty certainly prognosticate that there is ulceration or other organic change in the coats of the lower bowels. This state will, of itself, keep up chronic diarrhœa or dysentery, till the parts are restored to a sound condition—and, even after the structure becomes sound, the function, from long habit, will remain deranged, or easily rendered so by very slight causes.

But another, and still more fertile source of chronic bowel-complaint is disordered function, or diseased structure of the liver—one very common effect of which, is relaxation and irritability of the bowels, especially in a tropical climate, and for some time after returning to Europe. It is not necessary, in this place to enquire into the reason why the function of the bowels should be so generally disturbed by disorder of the liver. The fact is well known to all who have practised in tropical climates, and that is sufficient for the purpose, at present.

If the bowel complaint be unaccompanied by hepatic affection, and merely kept up by disease or disorder in the bowels themselves, the treatment is less complicated, both on the passage home, and subsequently in Europe, than where chronic hepatitis is present.

In the former case, or simple bowel-complaint, the invalid has three-fourths of the treatment in his own hands, or in his own power. Have we any certain remedy to cure a chronic inflammation, or ulceration of the internal surface of the bowels? I doubt it. Nature must be the principal physician. But we can withdraw those things which obstruct nature and keep up the disease. If any portion of external surface were in the above-mentioned condition, what would we do? The answer is plain. We would protect the part from extraneous irritation, and give it rest. Nature would do the remainder. This rule is equally applicable to bowel-complaints. The passage of the remains of our food over the irritable or diseased membrane lining the bowels, causes pain, throws the intestines into increased action, and, in fact, produces the phenomena of chronic dysentery or diarrhœa. We cannot, it is true, prevent this entirely; but we can live upon that kind of food which affords not only the least *quantity* of residue, but the least irritating *kind* of residue. This object is obtained by living as much as possible on farinaceous food, as sago, arrow-root, gruel, tapioca, rice, panada, with animal jellies. It is evident that every thing that passes the stomach undigested must add to the complaint, and, therefore, the quantity of nourishment taken in should always be as small as is compatible with the support of life. Indeed, as was observed before, the less that is taken into the stomach, comparatively speaking, the more will be extracted from it by the digestive apparatus, and the more strength we will derive from it. As the organs of digestion are, in this com-

plaint, greatly weakened, those substances which have any tendency to turn acid are particularly injurious and irritating, since the vital powers of the stomach and intestines are not sufficient to over-rule the chemical laws that produce the fermentative process. Hence vegetables and fruit are poison to the dysenteric invalid. The drink is also a matter of great importance. Wine is generally injurious, and very weak brandy and water is the only stimulating potation that can be safely indulged in. Rice water, with some spice and a little brandy, is the best drink—and as little fluid of any kind as possible should be taken into the stomach.

There is one important item in the management of bowel-complaints which is too often overlooked. This is the necessity of *quietude*. It is difficult to account for the circumstance, but it is an absolute fact, that *rest* and the *horizontal posture* are of more benefit in dysenteric affections, whether acute or chronic, than in many of those spinal diseases for which the patient is confined to a hard mattress or an inclined plane. The action of the abdominal and other muscles sets in motion and augments the peristaltic action of the intestines, already in excess, and thus hurries along the remains of food, and produces many more evacuations than would otherwise take place in a state of quietude. The tropical invalid, therefore, should not be gadding too much about the decks on the voyage home, but confine himself a good deal to his cot or his cabin; and in wet or blowing weather he should not attempt to go from below, unless compelled by unavoidable circumstances. It has been objected to this, by a respectable Reviewer, that the caution above-mentioned subjects the invalid to the impure air of the between-decks of a ship. There is little or no impure air in the cabins of Indiamen; and at all events, this inconvenience is not to be compared to the exasperation of a bowel-complaint, by exposure to wet and cold on the open deck.

As the temperature of the ocean is, at all times, much below that of the land in the hot season, the invalid should guard the skin most scrupulously from all assaults of moisture or cold air. If this be not attended to, the bowel-complaint will be exasperated instead of amended on the homeward-voyage. The belly should be bandaged pretty tightly with a very long flannel roller, which will prove not only a defence from cold and humidity, but it will curb the action of the abdominal muscles, and tend to keep the intestines quieter. Food and drink should not be taken either very hot or very cold. The *former* excites the bowels almost immediately—and the *latter* causes pain in the stomach and colic in the intestines.

But is there nothing to be done in the way of medicine? Yes, provided the medicinal treatment be aided by the strictest attention to diet and regimen, as sketched out here. We cannot by direct remedies heal

chronic ulcerations, or remove thickenings, or other morbid affections of the intestines—but we can greatly assist Nature in preventing and removing various sources of irritation; and we can lessen the morbid sensibility or irritability of the bowels themselves, and thus check the increased discharges from them.

The two principal sources of irritation are, the remains of food passing along an irritable or actually diseased surface—and acrid or morbid secretions, coming from the liver, the pancreas, and the glands and follicles of the intestines themselves. I have already hinted at the means of lessening the irritation of fecal matters, by strict attention to the quantity and quality of food taken into the stomach. If this point be attended to, much of the inconvenience from morbid secretions will be prevented; for there is not a more certain method of rendering the secretions acrid and diseased, than by eating and drinking more in *quantity* than can be well digested and disposed of—or things of a *quality* known to disagree with irritable bowels.

For the improvement of the biliary secretion, much may be done by medicinal treatment. As there is generally some degree of low inflammation or congestion about the liver, a few ounces of blood taken from the neighbourhood of that organ, once in a fortnight or three weeks, will be of essential benefit—especially if there be pain or tenderness on pressure under the false ribs. The counter-irritation of an occasional blister, or, what is better, a tartar-emetic plaster to the region of the liver, will be found a useful item in the treatment. Very minute doses of the mildest mercurial, particularly the hydrargyrum cum creta, or the blue-pill, combined with a small quantity of ipecacuan, and a drop or two of essential oil, every night, will be necessary, even if long and repeated courses of mercury have been previously endured. For it is to be recollected, that the same remedy which fails, or only partially succeeds in tropical climates, where the causes of hepatic derangement are in constant operation, will be often successful when the individual is withdrawn from the sphere of these causes, and enjoys the pure air of the ocean, or the genial influence of his native skies. But a mild mercurial is necessary, as an alterative, and to keep up some degree of healthy action in an organ that has been long stimulated by the heat of India, and by large doses of the same medicine, unavoidably exhibited to prevent destruction of the biliary apparatus.

As *acidity* is a common symptom in chronic bowel-complaints, so alkaline and absorbent medicines are daily and almost hourly necessary, till the digestive organs have acquired more power over the food taken in. Three to five grains of the carbonate of soda, with an equal quan-

tity of the compound cinnamon powder, three or four times a day, will be a useful antacid, and will cut off one source of irritation.

On the other hand, *rancidity* is apt to prevail where oily or fat substances are taken into the stomach. We cannot qualify this so readily as acidity. Indeed, I have shewn in another place, that this rancidity is, sometimes at least, accompanied by an acrimonious *alkali*, and requires acids for its removal. We should avoid the cause. A bitter spirituous tincture is the best thing to check rancidity when it has taken place.

Acrid, acid, and rancid matters, however, are so quickly and so constantly generated in the bowels, that we are forced to expel them by aperient medicines, even at a time when the intestines are really too often acted on. The relief that follows this forcible expulsion of morbid secretions has induced both patients and practitioners to have too much recourse to purgatives, both in acute and chronic bowel-complaints. These give relief in two ways—by removing irritating matters, and by lessening, for a time, irritability itself. Any strongly acting purgative will, as it were, exhaust the irritability of the nerves of the mucous membrane, and a temporary insusceptibility to the impressions is the natural consequence. But this method should be cautiously employed, and other means are preferable. Castor oil, rhubarb, magnesia, and the milder aperients, not too often repeated, are much better than doses of calomel and black-draught, whatever may be the degree of comfort experienced after these last medicines. Thin injections of gruel and oil, with some laudanum, are very useful, not only by allaying irritability of the rectum and colon, but by washing away the remains of irritating secretions from these parts. Whenever we exhibit purgatives in this complaint, we should combine with them some slight anodyne—especially the extract of hyosciamus or lettuce. This is a precaution too little attended to in practice.

So much for the correction of irritation resulting from diseased secretions. But we must remember that there is a morbid *irritability* of the mucous surfaces of the stomach, and especially of the bowels, in consequence of which, things that, in health, would produce no sensation, much less inconvenience, cannot now be borne without great discomfort. This state often obtains where no inflammation, no ulceration, no organic or perceptible change of structure in the parts themselves, has yet taken place, or remains after having once existed. Such condition appertains to the nerves of the digestive organs, and can only be remedied through the nervous system. There are many ways of diminishing morbid nervous irritability—I say *morbid*, because those things which

decrease *morbid* irritability or sensibility, will not always decrease natural or healthy irritability. I have remarked on one of the classes of means we are to use—the subduction of irritating food, and the correction or removal of irritating secretions. The direct reduction of morbid sensibility in the intestines is generally attempted by direct sedatives or anodynes—of which opium stands at the head. Without this valuable medicine, we can seldom succeed in the bowel-complaints of hot climates: but its use is attended with much inconvenience in many constitutions, and we should endeavour to make as little as possible serve the purpose of quieting the bowels, and lulling the sensibilities of their nerves. From half a grain to a grain of opium, combined with two or three of hyosciamus, a grain of blue-pill, and half a grain of ipecacuan, will be found very beneficial every night at bed-time, continued for a considerable time, while, every second or third day, a small dose of castor oil may be advantageously taken to remove any hardened fæces or diseased secretions from the cells of the colon, in which they occasionally lurk, and keep up irritation in the whole line of the bowels. Where castor oil cannot be taken, rhubarb and magnesia are the best substitutes.

When the invalid is harassed through the day with frequent motions, consisting principally of slimy mucus, and attended with straining and tenesmus, he should keep as quiet and horizontal as possible, and take a spoonful of the following medicine after every relaxed motion.

R. Mist. Cretæ.....	℥iv.
Confect. Aromat.....	℥ij.
Tinct. Rhei.....	
——Card. comp. āā	℥ij.
Liq. Opii Sed.....	℥j.
Syr. Zingib.....	℥iij.

Misce, fiat mistura, capiat coch. j. mag. post singulam sedem liquidam.

If the opium disagree, the tincture of hyosciamus may be substituted; but it is not so efficacious in restraining the discharges from the bowels.

There are many other medicinal substances which lessen morbid sensibility of the bowels besides those of the anodyne or narcotic class. It has long been known that *debility* is the parent of *irritability*. This is obvious to the most superficial observers. A familiar example is seen after all acute or inflammatory disease. During the height of the fever or inflammation, for instance, the general excitement of the system prevents the feeling of weakness—but as soon as the excitement subsides, the patient is then sensible of his exhaustion, and becomes proverbially irritable. Nurses and other attendants on the sick are aware that this irritability is a sign that the disease is subsiding or subsided, and always

consider it as a favorable symptom. Now what applies to the whole, applies also to a part. Wherever local disease has been established, and the structure or functions injured, *there* will be debility and irritability. By removing the *former*, we shall generally mitigate the *latter*. Tonics, therefore, when they can be borne, and where they do not induce too much excitement, are valuable means of blunting the morbid sensibility of the nerves. But their bulk often proves a source of irritation to the stomach and bowels, hence the sulphate of quinine, properly managed, is superior to most others, on account of its vast efficacy in so small a form. It is generally given in doses too large, by which an excitement is produced that renders it necessary to discontinue the medicine. The following form will be found a convenient mode of administering this remedy in chronic dysentery and diarrhœa.

R. Tinct. Gentianæ comp.	℥iss.
— Zingiberis	℥i.
— Camphoræ comp. . . .	℥ij.
— Sulphatis Quininæ....	gr. xv.

ft. solutio, capiat coch. j. minut. ter die, ex pauxillo aquæ tostæ.

The principal inconvenience that I have found to follow from this remedy, is the increase of appetite which generally succeeds, and which may induce the patient to indulge too freely in food. He ought to be put on his guard against this danger. The improvement of digestion that results from the operation of this medicine on the stomach will greatly conduce to the removal of irritation from the bowels, of which imperfectly-digested food is a common source. Independent of this, the quinine will be found, thus managed, to give tone to the whole line of the mucous membrane—to restrain the mucous discharges—and thus to directly lessen morbid sensibility in the nerves of these parts.

I am not partial to common astringents in the bowel-complaints which follow diseases and residence in hot climates. The mucous discharge is thus too suddenly stopped, and a sub-acute inflammation of the membrane from whence it issued, or of the liver itself, is not unusually set up in consequence. It is far better to withdraw irritation and reduce morbid sensibility—the *causes* of the increased discharges, than to strike at the branches while the root remains untouched. The various astringent substances that have been employed to restrain dysenteric and hepatic flux, are worse than useless; and the practice of applying them is built on an erroneous foundation.*

If the means which I have pointed out should fail, it is highly probable

* Within these two or three years, I have seen some extraordinary good effects,

that a gentle mercurial course will be necessary, either on the voyage home, or soon after gaining the shores of Europe. This course, as I have hinted before, will often effect a cure, where long and repeated courses of mercury, beneath a tropical sun, and in a land that produces the causes of the disease, may fail or give only temporary relief. The mouth, however, should not be made sore while rounding the Cape, especially if that part of the voyage be made in June, July, or August, when wet and cold weather may be expected. Advantage should be taken of the milder and lower latitudes, near the Equator, if it be deemed indispensable to impregnate the system with mercury.

But, however this may be, as the tropical invalid approaches the shores of England, he should protect the skin, by all possible care, from chills or damp. The atmospheric influence will reach him, in spite of all precautions; but if he rashly exposes himself to the skies of this country, after a long residence in the torrid zone, especially if labouring under bowel or pulmonic complaint, he will be in danger of serious aggravation of his malady. Flannel and chamois-leather should be worn by the tropical invalid.

Before quitting the subject of the homeward-bound voyage, I cannot help saying a few words more on a topic which has been already touched on—namely, those affections of the chest which are originally induced by disease of the liver, or of the digestive organs generally, and which have been called, “dyspeptic phthisis,” “stomach cough,” &c. Many valuable lives are annually lost by treating these complaints as purely symptomatic, when they have actually become fixed diseases in the lungs or other parts within the chest. When the disorder has passed the boundary, and become independent of its original cause, which it not unfrequently does, then I maintain, from the most unquestionable evidence, that it is aggravated rather than alleviated by the remedies employed for the cure of the original complaint. Modern investigations (auscultation and percussion) have now given us the means of ascertaining with the greatest accuracy, whether there be or be not organic affection of the lungs or heart. The medical practitioner, therefore, who has the charge of the invalid on the voyage, or who first sees him on his reaching Europe, should not neglect to examine the chest most

in chronic irritability of the bowels, from small doses of the nitrate of silver taken internally—namely, half a grain to a grain twice a day. We know the efficacy of this application externally, in lessening the irritability of sores; and I conceive that it acts in the same manner internally. See the observations on this remedy in the first part of this Essay. I have also seen good effects from small doses of the sulphate of copper—a quarter of a grain twice or thrice a day, with the same quantity of opium.—10th Ed.

scrupulously, whenever there is cough, difficulty of breathing, or irregularity in the circulation; and if any disease be detected there, the hepatic or stomach affection should be made quite a secondary consideration, and every effort should be used to check the more dangerous malady that has supervened. A few days of exposure to a cold or variable atmosphere may render the thoracic complaint incurable; and, therefore, seclusion in a regulated temperature should be enjoined, while local bleeding, blistering, and antimonials, are substituted for mercurials, and other measures pursued for the cure of the abdominal disorder. The invalid should be recommended to confine himself to his cabin, if on the voyage; or within doors, if landed, in the most sheltered situation which the country can present. It is really lamentable to see men returned from a tropical climate, walking about the streets of London, or going to places of amusement, in the cold raw evenings of Winter, while the hacking cough, emaciated figure, and variegated countenance, proclaim a condition of the lungs which ill comports with this exposure to the vicissitudes of a northern climate.

The pulmonic affection which is caused by and supervenes on derangement of the liver and digestive organs, may occasionally, perhaps, be discriminated, especially in the early stage, from that which commences originally in the chest, and proceeds from scrofula, or phthisical disposition of the constitution. The cough is at first dry, or only accompanied by a trifling expectoration of mucus—the spirits are more depressed—the countenance more sallow than in the idiopathic forms of pulmonary disease. The paroxysms of cough are generally after eating, and early in the morning—and lying over on the *left* side is apt to excite cough when in bed.

In the progress of the disease, the expectoration becomes more copious, and from being limpid or glairy, begins to exhibit some suspicious points of a purulent character. This last character gradually becomes more predominant, as the disease advances, and occasionally some streaks of blood are seen. In the commencement of the disease, and consequently where the cough and other phenomena are merely symptomatic of disorder in another quarter, the patient can expand his chest, and go up an ascent with much less breathlessness than in cases where phthisis is advancing, in consequence of a previously tuberculated state of the lungs. In the dyspeptic pulmonary affection, in short, it is the mucous membrane which is generally engaged, especially at the beginning, and, therefore, the pulmonary structure is pervious to the air. In the more advanced stages, the parenchymatous tissue of the lungs becomes condensed, or hepatized—and the mucous membrane of the trachea and bronchia organically change, so as to throw out puriform matter. If

there be any disposition to scrofula or tubercles, this disposition is likely to be excited into action by the sympathetic irritation, and then phthisis, of the common and fatal kind, will soon be developed.

In this insidious and dangerous symptomatic disorder of the chest, there is often little or no pain at any fixed point—but there is not unfrequently an uneasy sensation under the sternum—or a dull pain at the pit of the stomach—or fugitive pains, apparently of a muscular character, in various parts of the thorax, or even in the limbs, the spine, &c. It is probable that these are referrible to the disorder of the digestive organs rather than to the affection of the respiratory apparatus. The fever does not take on the regular hectic form so early in the dyspeptic as in the idiopathic phthisis—nor is the emaciation so rapid.

It will be evident to the medical practitioner that these are only *modified* symptoms of original pulmonary disease, and consequently offer no certain criterion that the disease is symptomatic of derangement in the digestive organs. The presence of this last derangement, however, as indicated by flatulence, irregularity of bowels, depraved secretions, furred tongue, loss of appetite, tenderness and fulness of the epigastrium, and a variety of nervous and hypochondriacal phenomena, will assist the diagnosis. But the grand object is to determine the period when *symptomatic disorder* is passing into the state of *actual disease*—and this, I maintain, cannot be done by any investigation of symptoms, however minute, short of exploration of the chest by means of auscultation and percussion. Yet, on this distinction between the two states, the whole question of treatment hinges.

Dr. Philip has divided this disease into four stages, in which, he acknowledges, the prognosis and mode of treatment are different. 1^{mo} The pulmonic affection is merely sympathetic, and ceases with the removal of its cause. This stage is short in duration, mild in symptoms, and accompanied by no expectoration except some phlegm with the cough. 2nd The sympathetic has produced actual disease in the lungs, indicated by some degree of inflammation in the bronchia, and admixture of pus-like substance in the expectoration, sometimes blood. The tendency to fever is now greater, yet seldom in the hectic form. It is at this period, Dr. Philip thinks, that tubercles begin to form. But, at the time Dr. P. wrote, we had not the means of ascertaining this circumstance, or, in fact, of knowing what were the organic changes that might be commencing or making progress in the lungs—nay, we had not the means of saying whether organic change had actually begun. Hence the diagnosis was mere guess-work. The ulterior stages are the same as in idiopathic phthisis, and on these it is unnecessary to remark. Dr. Philip says that it is *after* fulness and tenderness have taken place

in the epigastric region, that the derangement of the digestive organs affects the pulmonary function. But how long after, or *when* it begins to affect the pulmonary *structure*, neither he nor any man can tell, without the method of exploration alluded to, which is a discovery of only recent date. Without this investigation then, we may be too early in our treatment of the pulmonic affection, or too late. The *former* error is dangerous—but the *latter* is fatal to the patient. If auscultation were attended with no other advantage than this discrimination of the two stages of dyspeptic phthisis (considered so very prevalent in this country), it would be the most valuable discovery of the present century.

The treatment of the first stage of this disorder will be almost entirely directed against the hepatic and gastric affections on which it depends: and this will be stated farther on.* But even in this stage, much may be done by regimen, attention to dress, and regulation of temperature, in saving the organs of the chest from any increase of disorder in their function, or risk of change in their structure. This attention cannot injure the dyspeptic disorder, but, on the contrary, contribute to its removal; while a neglect on this point may allow a symptomatic to change into an organic disease, when the chance of recovery must be small indeed.

So few opportunities are afforded of ascertaining the state of the lungs, by dissection, in the early stage of stomach-cough, or dyspeptic phthisis (as it has been improperly called, for, in the early stage, it is not phthisis at all), that we have no other means of knowing what is passing, than by auscultation and percussion. In those cases where the cough is purely symptomatic, and where there is no other disease of the chest, the sound will be clear in all parts, and the air will be heard permeating the parenchyma of the lungs in every direction. In many instances where I have examined the chest, and where there were only the phenomena of sympathetic affection, I have found some portions of lung, especially in the right side, where no respiration could be heard, and where the sound was quite dull. By blistering, antimonials, colchicum, and seclusion, these points have regained their integrity of function, and the sound has returned. Hence I am led to conclude, that one of the first changes that takes place, where symptomatic is passing into structural disease, is a condensation of the parenchymatous substance of the lungs, by no means incompatible with restoration.

It is probable, however, that the *very first change* is that of *irritation* of the mucous membrane of the trachea and bronchia, passing into a low kind of *inflammation*, with a corresponding change from a dry

* See, also, the medicinal treatment of indigestion in the first part of this Essay.

cough to one with some slight fever and expectoration. Condensation, or hepatization, as it is called, is likely to be the next change ; and this supposition is, I think, strengthened by the fact, as ascertained by the stethoscope, that *hepatization* in the right side is the most common of all organic affections which we find in the lungs of people somewhat advanced in dyspeptic phthisis. In the ulterior stages, the lungs present, of course, on dissection and auscultation, the same phenomena as in regular idiopathic phthisis, so widely prevalent and so destructive in this country.

I shall adduce no more reasons than are pointed out above, why the medical attendant should minutely examine the state of the chest, where cough has supervened on disorder of the digestive organs. A delusive hope that the former may be safely overlooked, and that its removal will follow, as a matter of course, the improvement of the hepatic and digestive functions, may very often cause the practitioner a world of chagrin afterwards, when he finds his patient getting worse, and when an alteration in the treatment and prognostication will betray an error in the first opinion that was formed. Whereas, by careful examination of the chest, in the first instance, the practitioner will be enabled to form a more correct estimate, and, consequently, to give a more guarded prognosis—circumstances that will be very useful to him, if the disease take a serious turn in the sequel.

Should an examination of the thoracic organs shew the existence of organic disease in the lungs, no time is to be lost in sending the patient to the most beneficial atmosphere, where the temperature should be regulated, and every possible means employed to arrest the progress of pulmonary disease. So much difference of opinion prevails respecting the climates of France and Italy, that it is difficult to say where the patient should go. If other things were equal, Nice or Rome would appear to afford a fairer prospect than the gloomy skies of England—at least before any purulent expectoration appears. When a breach of structure is once made in the lungs, a warm climate does no good, but rather increases the evil, or accelerates death.*

When puriform matter begins to issue from the lungs, whether from broken-down tubercles, a common vomica, or a diseased surface of mucous membrane, I apprehend a great revolution is taking place in the general treatment. From several cases which have been under my own care, I am confident that the tonic plan, combined with local depletion and counter-irritation, is infinitely superior to the asses' milk and

* Hastings is, I believe, one of the best Winter and Spring residences in England.—10th Edition.

hermit's diet on which phthisical patients are usually kept. In external scrofulous sores, our great object is to improve the general health, and increase the general strength—and why should not the same plan be pursued when there is an internal abscess or ulcer? I think we too often confound the fever of irritation—or, in other words, the phenomena of hectic, with inflammation—and that the means used to subdue this fever have too often increased it. Several cases have fallen under my notice, where the expectoration was purulent—the pulse ranging from 110 to 140—with hectic fever and perspirations, and, in short, all the symptoms of established phthisis; and yet, where the whole of these phenomena disappeared under the administration of the sulphate of quinine in well acidulated infusion of roses, aided by light animal food—sponging the chest twice a day, with tepid vinegar and water, and obviating pain in the chest by blisters—antimonial ointment—and occasional leeching. This, too, was done without any other air than that of London, Pentonville, and Brompton.*

ORGANIC DISEASE OF THE LIVER.

I may venture to assert, from pretty ample experience, that not one in ten of those who are supposed to labour under “CHRONIC LIVER DISEASE,” as it is termed, on their return from hot climates, have any organic affection of that viscus, which can be detected by the most minute examination. It is really astonishing how many people are deceived—medical men as well as their patients, respecting enlargements and indurations of the organ in question. There are very few who labour under derangement of function in the liver or digestive apparatus, who have not *tenderness* on pressure, and an apparent *fullness* in the epigastric region, and under the false ribs of the right side. These symptoms alone are quite enough, in some men's minds, to entitle a tropical invalid, in particular, to the privilege of having “CHRONIC HEPATITIS,” with enlargement of the organ. Yet, in nine instances out of ten, there is no such thing as organic disease in the case.† The

* The air of Brompton, by the way, is peculiarly mild and agreeable in pulmonic affections, as the Londoners well know, who send their children out there when labouring under hooping cough—and who resort thither themselves when affected with pulmonary complaints. It is protected from the easterly and northerly winds by London itself, and by the hills of Pentonville, Highgate and Hampstead. It is open to the South and West; and is, upon the whole, the mildest air in the vicinity of the metropolis. The respirator is an important auxiliary.

† THE EDINBURGH JOURNAL OF MEDICAL SCIENCE, while remarking on this passage of my work, adduces the following testimony in corroboration of my sentiments.

tenderness on pressure is infinitely more common where there can be no suspicion of *organic disease* of the liver, than where this last is palpable to the touch or even the eye. It is very common in the lighter shades, as well as in the higher degrees of dyspepsia, and arises from morbid sensibility in the nerves of the stomach and bowels, far more frequently than from change of structure, either in the liver or other contiguous organs. It is very often present, even where there is no *functional* affection of the above-mentioned viscera, but where there is an irritable state of the mucous membrane of the colon, as it sweeps round under the liver and false ribs: nay, I affirm that this tenderness of the epigastrium, to which so much undue importance is attached, may, at any time, be induced by a dose of purgative medicine that irritates the mucous membrane of the intestines. There is, in fact, at all times, and in all people, even in the highest health, a greater or less degree of tenderness on pressure at the pit of the stomach—most probably owing to the vicinity of the great semilunar ganglion, or solar plexus, the *sensorium* of the abdominal viscera. What school-boy does not know how easily he may be what is called “hearted” by a slight blow in that region? I repeat it, then, that tenderness, in epigastrio, is an exceedingly fallacious sign, and no criterion at all of organic disease in the parts underneath.

This natural tenderness at the pit of the stomach leads to another error very commonly committed—namely, the belief that an enlargement of the liver exists. The moment that the fingers of the physician or surgeon are thrust against the parietes of this region, the abdominal muscles are thrown into action, and one of the rigid bellies of the rectus, on the right side, is every day mistaken for the edge of the liver. Of this error I have seen numerous examples. No accurate judgment can be formed till the patient is placed in such a horizontal position as entirely relaxes the abdominal muscles. In some people, indeed, it is almost impossible to get these muscles relaxed in any position, while under examination; as they are voluntarily or involuntarily thrown

“Dr. Knox, our distinguished fellow labourer, whose fame, as an anatomist, must be well known to our readers, has just given us a strong confirmation of this view of hepatitis (in which we heartily concur) so ably supported by Dr. Johnson. At Hulsea Barracks, whither the invalids from India, Ceylon, and the Indian Islands, used formerly to be sent, he dissected from forty to sixty bodies, said to be labouring under simple hepatitis, or hepatic dysentery, and of this number two only exhibited traces of *organic disease of the liver*.”—*Ed. Jour. Med. Science*, No. 5.

But, like the stomach, the liver is very frequently affected in its *function*, when the anatomist's knife can detect no change in its structure. This is to be constantly borne in mind.

into action the moment the fingers are applied to these parts. And, after this relaxation is obtained, a loaded state of the colon (no uncommon occurrence) will often deceive the incautious practitioner, and lead him to think he has discovered an indurated liver, which, in a few days, disappears under the use of aperient medicine!

In respect to fulness of the epigastrium there is much misconception. In corpulent people, no dependance can be placed on this symptom; while, in lean people, and especially in people who have become emaciated, as is often the case, the *fulness* is more *apparent* than real. In fact, in almost all people who are naturally thin, or emaciated by ill-health, there is an *apparent* fulness in the epigastrium while in the erect posture, produced by the shrunk state of the abdomen, and the descent of the liver at each inspiration. In some individuals, the stomach is much larger than in others, and any distention of this organ by food or flatus will give an unnatural appearance of fulness to this region.

Pain in the region of the liver, or, indeed, in the "right side," is another symptom which leads many astray. The biliary organ occupies a large space, and is surrounded by other organs and structures much more susceptible of pain than itself. The intercostal and other muscles, the stomach, the duodenum, and different contiguous parts, are far oftener the seat of pain than the liver itself—and even when the seat of pain is in the biliary apparatus, it is more frequently in the gall-bladder or ducts than in the substance of the organ. But *pain* is no proof of organic disease in any part of the body. The most painful disease to which the human fabric is subject, *tic douloureux*, is unaccompanied by any visible change in the part, and often has its cause at a great distance from its apparent seat.

In respect to a symptom which has been, time immemorial, considered as pathognomonic of liver disease—*pain at the tip of the right shoulder*—I acknowledge that it does, in a certain proportion of cases, exist. But, from what I have myself seen, and from an examination of the records of cases where dissection proved the existence of organic disease in the liver, I am confident that this symptom does not accompany one-twentieth of the diseases in question; and that when it does obtain, it is far more frequently an accompaniment of disordered function than disease of structure. Neither is this pain so generally in the tip of the shoulder as is supposed. It is very often seated in the inferior angle of the scapula; nay, still lower down among the long muscles of the back. I have known it to continue long and troublesome, where the functions of the liver were but little affected, and where the case was evidently dyspepsia, dependant on irritability of the nerves of the stomach and upper bowels—and it has disappeared under the use of

medicines directed entirely to the dyspepsia. Why this part should be more frequently the seat of this sympathetic pain than other parts of the body, is by no means accounted for by any particular distribution of nerves. True it is, that there is no spot on the surface of the body, the nerves of which do not communicate, directly or indirectly, with the nerves of all other parts; but this does not clearly account for the peculiar courses and directions in which sympathies run. Thus, *tic-douloureux*, when dependant on irritation in the digestive organs, takes its seat very generally on one side of the face—for which no very satisfactory reason can be given.

Pain, then, whether in the region of the biliary apparatus, in the shoulder, or in the back, is no criterion of organic disease of the liver. It is more frequently absent than present in such disease—and, when present, it is more commonly dependant on *disordered function* of the liver or stomach, than on any change of structure in either of these organs that can be detected by the knife of the anatomist, on dissection.

This symptom, by the way, is rather a sense of burning or aching than actual pain. It is more felt when exercise is taken than when the individual is quiet—and is very generally increased when the stomach is more than usually out of order, or when any temporary irritation of mind is kindled up.

These are some of the principal sources of fallacy in regard to organic diseases of the liver, and often lead to unnecessary courses of mercury and other medicines, that, at least, do no good, but sometimes much harm.

What evidence, then, it may be asked, have we of change of structure in the biliary apparatus? If this organ can be felt protruding below the ribs, we can say, it is *enlarged*, but of what that enlargement consists, no pathologist can tell—unless he speak by guess. It may be tubercles—it may be interstitial deposits in the parenchymatous structure, of various kinds and consistencies—or hypertrophy of the parenchyma itself. It may be hydatids, &c. but the scalpel alone can unravel the true nature of the disease—and *then* it is little consolation to the owner of the organ, even should its portrait form a beautiful and expensive plate, or the diseased mass be preserved in that fluid which destroyed its original texture and life itself!

Of the various changes of structure which dissection has shewn in the livers of those who have sojourned in hot and unhealthy climates, an enlargement, generally with induration, of the parenchymatous structure of the organ, is perhaps the most common. Whether this increase of volume be owing to simple increase of the natural structure (*hypertrophia* or reproduction, as it is called by some foreign writers), or to an

interstitial deposit of fatty, albuminous, or other animal material, admits of some doubt. That the liver, like the heart, may become magnified by multiplication, as it were, of its own natural substance, is by no means improbable; since we every day see livers of immense size, but of apparently healthy, or at least homogeneous structure, in the bodies of those who betrayed no symptoms of liver-disease during life. But in the great majority of those who have evinced derangement of function and increase of size in the biliary organ, we find a *variegated* appearance in the structure after death, proving an interstitial deposit, which I conceive to be the most common cause of the enlargement. To the other morbid growths, as tubercles, hydatids, &c. the tropical invalid is not more subject than his countrymen at home.

There is yet another organic disease of the liver, more common in this country than in hot climates; which consists of a diminution and condensation of the parenchymatous structure, with a corresponding inefficiency of function and a long train of symptoms which it would be endless to enumerate.

The above are the principle changes which the biliary apparatus undergoes during life, and which can only be ascertained by the knife after death. But it will be asked, "can we not tell by the symptoms what is the organic change going on?" I venture to assert that we cannot. Since little can be learnt from external examination in respect to the *kind* of structural disease in the liver, we have only the disorder of function, and its consequences on the constitution, to guide us—and I unhesitatingly aver, that *disorder of function* in the biliary apparatus is often more considerable where there is no change of structure, than where there is organic disease of great and irremediable magnitude. This is so much the case, that when I find much functional disturbance in the biliary secretion, and much constitutional derangement resulting thence, I conclude (unless there be *tangible* enlargement) that the structure of the liver is unaffected in any material degree.

The symptoms which afford the greatest probability of organic disease in the liver (supposing that no tangible enlargement is present, for then the case is unequivocal,) are wasting of the body, a peculiar sallow and unhealthy aspect of countenance, permanent yellowness of the skin, derangement of the stomach and bowels, and dropsical effusions. None of these symptoms are *certain* criteria, nor even the whole of them combined—they merely afford presumptive proof. They may all, even the permanent jaundice, exist where the scalpel can detect no material change of structure.* The morbid condition of the bile, or, in other

* Cases of permanent jaundice are on record, where no organic disease of the liver

words, *disordered function* of the liver, is, as I observed before, much more conspicuous and severe in many cases where there is no change of structure, than in cases where the enlargement of the liver is unequivocal, and the whole organ full of tubercles or other morbid growths. This is hardly credible; but it is a fact. I have seen motions, day after day, and week after week, containing the most healthy-looking bile, where the liver reached as low as the umbilicus, and was found after death a mass of disease; while, on the other hand, every practitioner must have seen patients passing, for months in succession, or rather for years, the most depraved biliary secretion, deranging the functions of all the abdominal organs, and powerfully disturbing the health, where no organic disease could have existed, since all these symptoms have been found to vanish suddenly, under the influence of proper medicine, diet, and pure air.

In fine, we have no certain mark of organic disease of the liver, but tangible enlargement of its substance, and *then*, no certainty of the precise nature of the morbid structure—all the disorders of its function, and the consequences of these disorders on the general health, being found infinitely more often *without* than *with* any cognizable change in the organization of the biliary apparatus.

This investigation or analysis of diagnostic symptoms, is of the utmost importance in a practical point of view, for it narrows the treatment into two principal indications—that which is designed for the reparation of diseased structure, and that which is directed to the correction of disordered function.*

Treatment. As I have already shewn that we have no certain proof of diseased structure in the liver, except from its tangible enlargement, so it is to this state that I confine myself on the present occasion; for this criterion being absent, all we can aim at is the improvement of *disordered function*, which has been fully treated of already.

or obstruction of its ducts could be found after death. Such cases, however, are very rare; and permanent jaundice may generally be set down as dependant on some tumour in the liver pressing on the bile-ducts, and causing regurgitation, or absorption of the bile into the circulation.

* Inflammation, acute or chronic, and irritation, are rather to be considered the morbid processes by which structure is changed, and function disordered, than the organic and functional affections themselves. It would not be proper to say that a man labours under organic disease of the lungs because he is affected with pneumonia, though the pulmonic inflammation may terminate in or produce disorganization. And, on the same principle, I do not class hepatitis, acute or chronic, among the organic changes in the liver, though it leads to those changes.

Have we any, and what methods of removing enlargement of the liver, including various kinds of morbid growth? That simple enlargement of this organ is often removed by proper means, there can be no doubt; but that we have much power over tubercular or hydatid growths, is very questionable. In all kinds of enlargement, however, one great object is to cut off as much of the supply by which the morbid growth is fed, as possible—and the next is to promote the absorption of what has already taken place. There can be very little doubt that, in most morbid growths, both in the liver and elsewhere, there is more or less increased activity of the bloodvessels of the part—or, in other words, inflammation, generally of the chronic kind. This slow or chronic hepatitis, by which the biliary organ is ultimately changed in structure, with induration and enlargement, shews itself more by derangement of function in the organ itself, and in those organs with which it is associated in office, together with a number of anomalous symptoms in the constitution at large, than by those symptoms which are common to slow inflammation in other structures of the body. We must not expect to find quickness of pulse, heat of skin, thirst, and other inflammatory phenomena, attending this slow process of disorganization, though these are more easily excited by slight causes than where there is no local disease. The constitutional disturbance will be found to be more proportioned to the derangement of the biliary secretion than to the change of structure or increase of bulk in the organ itself. Every practitioner must have seen instances where the liver descended low in the abdomen with little apparent inconvenience to the constitution, while, in other cases, where the same organ could scarcely be felt, the great deterioration of its function has produced the utmost distress of mind and body, and led to dropsical effusions, fevers, and other diseases destructive of life. From this it will be evident that one great object in the treatment of structural disease of the liver, is to correct or improve its function; and as an inflammatory irritation is at least a main cause both of the organic change that is going forward, and the disordered secretion that obtains, the removal of all agents that increase or keep up this irritation or inflammation is a *sine qua non* in the treatment. As my object in this Essay is rather to render the indications simple and clear, than to enter into minute details of therapeutical management, I need only observe that, in the organic disease of which we are treating, our main chance of success lies in dietetic discipline. If the patient will not consent to abandon the luxuries of the table, and the stimulation of wine, and all fermented liquors, his fate is cast, and bloated dropsy, with all its horrors, will soon overtake him.

Strict abstinence in respect to food, and a very moderate allowance of

every kind of vinous and spirituous potation, act in a triply beneficial manner. This system diminishes the supply of nutriment to the morbid growth—withdraws stimulation from an already irritated or inflamed organ—and powerfully promotes the absorption of any interstitial deposit or other preternatural growth in the biliary apparatus. The result is an improvement in the functions of the organ, and a general amelioration of the health, if at all within the reach of amelioration.

This is the fundamental principle of treatment in organic, as well as in functional disease. All the others are subordinate, but many of them very important. There are medicines which experience has proved to be capable of increasing the power of the absorbents in the removal of morbid growths. The principal one is mercury; but it must be very carefully managed in organic diseases. Mercurial frictions over the region of the liver should be preceded by several repetitions of a smaller or greater number of leeches, according to the exigency of the case, and the strength of the patient. After ten days or a fortnight, the leeches should be re-applied—then a crop of pustules brought out by tartarized antimony—and then again, the original measures renewed. A succession of changes in this way, do a great deal more than a long-continued course of any one remedial process.* In the mean time, the secretions should be strictly attended to. Gentle bitter aperients, as rhubarb combined with extract of camomile or gentian and blue-pill, may be given, and even the sulphate of quinine, when the appetite and digestive powers are weak. These means will enable the patient to take in and digest a sufficient quantity of light and unirritating nutriment to sustain the constitution, while attempts are made to reduce the unnatural structure in the liver. In organic as well as functional disease of the biliary apparatus, there is generally great derangement in the functions of the skin and the kidneys. Colchicum and the taraxacum are very useful auxiliaries in such cases, while the greatest attention is to be paid to dress, and to avoiding night air and moisture. The saline aperient waters of Cheltenham or Leamington, with the combined advantage of country air and mental amusement, will much contribute to improve the function of the liver, and through that process, the structure. Too little attention is paid to the urinary secretion in hepatic diseases, though it is of

* The propriety of a course of mercury, so as to affect the constitution, in tangible enlargements of the liver, must depend on the circumstances of the individual case; for it would be very dangerous to recommend it as a general rule, though nothing is more common than the association, in the mind, of an enlarged liver and a course of mercury. It is known, however, that mercury is often more beneficial in functional, than in structural diseases of this organ, but it must be used as an alterative rather than as a salivating agent.

the utmost importance, for dropsical effusions are the consequences which are most to be dreaded in all organic affections of the biliary apparatus, and they generally become the ultimate cause of the fatal termination. The taraxacum, in the form of expressed juice, or decoction of the root, with super-tartrate of potass and spices, is a very valuable medicine, as it improves the biliary secretion, and acts both on the bowels and kidneys. It may be used as a good substitute for mercury, or, at all events, to lessen the quantity that might otherwise be considered necessary, of that active mineral. How far iodine may possess the power of reducing morbid growths in the liver, has not yet been well ascertained; but it seems worthy of trial. In India the actual cautery is much used by the native doctors, in enlargements both of the liver and spleen, especially of the latter—and often with benefit. Europeans do not like to submit to this *apparently*, but not really formidable operation. The moxa might also be of some service.

These very brief observations are all that I deem it necessary to offer in respect to that organic disease of the liver which is ascertained by tangible enlargement. Without this criterion we have no positive proof of organic disease at all, and consequently our whole system of treatment hinges on regulating and improving the hepatic *function*, an indication which it is of infinite importance to pursue, and which would save many lives that are annually lost under the impression of organic disease, and under the system of treatment which is considered suitable to such a condition of the biliary apparatus. I have endeavoured to reduce the diagnosis within its proper, or, at all events, its practical limits, and to restrain the vague notions respecting “liver disease,” which are so prevalent and so detrimental. Indeed, I am convinced that were the term and idea of “organic disease” of the liver obliterated, not only from the nosological chart, but from the minds of practitioners, it would be much better for their patients. No possible danger can accrue from mistaking an organic disease of the liver for a functional one—but much mischief may result from the contrary mistake. This will appear a strange position to be maintained, and is the reverse of that commonly laid down; but it is not stated without mature reflection. More diseases of *structure* in the liver would be cured by careful attention to its *function*, than by all the other means put together.

In quitting this subject it is hardly necessary for me to say, that acute inflammation of this organ is passed over as not properly coming within the common acceptation of structural or functional disease.

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